

This document gives pertinent information concerning the reissuance of the VPDES Permit listed below. This permit is being processed as a Minor, Municipal permit. The discharge results from the operation of a 0.250 MGD wastewater treatment plant and includes a proposed future expansion to 0.375 MGD. The effluent limitations and special conditions contained in this permit will maintain the Water Quality Standards of 9 VAC 25-260-00 et seq.

1. Facility Name and Mailing Address: Town of Lovettsville WWTP
P.O. Box 209
Lovettsville, VA 20180
SIC Code: 4952 WWTP
Facility Location: 39183 Irish Corner Road
Lovettsville, VA 20180
County: Loudoun
Facility Contact Name: Keith Markel / Town Manager
Telephone Number: 540-822-5788
2. Permit No.: VA0023183
Current Expiration Date: 13 October 2008
Other VPDES Permits: VAN010129
Other Permits: Not Applicable
E2/E3/E4 Status: Not Applicable
3. Owner Name: Town of Lovettsville
Owner Contact/Title: Keith Markel / Town Manager
Telephone Number: 540-822-5788
4. Application Complete Date: 13 August 2008
Permit Drafted By: Douglas Frasier
Date Drafted: 22 July 2008
Draft Permit Reviewed By: Alison Thompson
Date Reviewed: 7 August 2008
Public Comment Period: Start Date: 11 December 2008
End Date: 12 January 2009
5. Receiving Waters Information: See **Attachment 1** for the Flow Frequency Determination
Receiving Stream Name: Dutchman Creek, UT
Drainage Area at Outfall: 6.98 square miles
River Mile: 0.94
Stream Basin: Potomac & Shenandoah Rivers
Subbasin: Lower Potomac
Section: 10
Stream Class: III
Special Standards: None
Waterbody ID: VAN-A01R
7Q10 Low Flow: 0.0 MGD
7Q10 High Flow: 0.0 MGD
1Q10 Low Flow: 0.0 MGD
1Q10 High Flow: 0.0 MGD
Harmonic Mean Flow: 0.0 MGD
30Q5 Flow: 0.0 MGD
303(d) Listed: No
30Q10 Flow: 0.0 MGD
TMDL Approved: No
Date TMDL Approved: Not Applicable
6. Statutory or Regulatory Basis for Special Conditions and Effluent Limitations:

<div style="margin-bottom: 5px;"><input checked="" type="checkbox"/> State Water Control Law</div> <div style="margin-bottom: 5px;"><input checked="" type="checkbox"/> Clean Water Act</div> <div style="margin-bottom: 5px;"><input checked="" type="checkbox"/> VPDES Permit Regulation</div> <div style="margin-bottom: 5px;"><input checked="" type="checkbox"/> EPA NPDES Regulation</div>	<div style="margin-bottom: 5px;"><input type="checkbox"/> EPA Guidelines</div> <div style="margin-bottom: 5px;"><input checked="" type="checkbox"/> Water Quality Standards</div> <div style="margin-bottom: 5px;"><input type="checkbox"/> Other</div>
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7. Licensed Operator Requirements: Class III
8. Reliability Class: Class I

9. Permit Characterization:

<input type="checkbox"/> Private	<input checked="" type="checkbox"/> Effluent Limited	<input checked="" type="checkbox"/> Possible Interstate Effect - Maryland
<input type="checkbox"/> Federal	<input checked="" type="checkbox"/> Water Quality Limited	<input type="checkbox"/> Compliance Schedule Required
<input type="checkbox"/> State	<input type="checkbox"/> Toxics Monitoring Program Required	<input type="checkbox"/> Interim Limits in Permit
<input checked="" type="checkbox"/> POTW	<input type="checkbox"/> Pretreatment Program Required	<input type="checkbox"/> Interim Limits in Other Document
<input type="checkbox"/> TMDL		

10. Wastewater Sources and Treatment Description:

The facility serves the Town of Lovettsville; a population of approximately 1,722.

The treatment works receives flow via a gravity sewer line. Wastewater first passes through a grinder and auger with screenings stored in waste receptacles until disposal at the landfill. The facility does have a backup manual barscreen. After preliminary treatment, flow enters a splitter box prior to two Schreiber aeration/clarifier units. Disinfection is accomplished via three UV units. Effluent is reaerated prior to discharging to an unnamed tributary to Dutchman Creek. The Potomac River is approximately three miles from the plant discharge.

The proposed expansion to 0.375 MGD will entail the installation of a third Schreiber unit, filtration units and an additional UV bank.

See **Attachment 2** for a facility schematic/diagram.

TABLE 1 OUTFALL DESCRIPTION				
Outfall Number	Discharge Sources	Treatment	Design Flow	Outfall Latitude and Longitude
001	Domestic Wastewater	See Item 10 above.	0.250 MGD	39° 16' 53" N 77° 38' 58" W
See Attachment 3 for topographic map.				

11. Sludge Treatment and Disposal Methods:

Wasted Activated Sludge (WAS) from the Schreiber units is sent to a 98,300 gallon aerobic sludge holding tank, where it is continuously aerated. When the holding tank is full, a contract hauler is called to pump and haul the sludge. It is taken to manhole S-17, located on the Loudoun County Parkway. The manhole is part of the Loudoun Water's (Loudoun County Sanitation Authority) collection system which transmits sewage and sludge to Blue Plains Wastewater Treatment Plant (DC0021199).

12. Discharges, Intakes, Monitoring Stations, Other Items in Vicinity of Discharge:

TABLE 2 DISCHARGES, INTAKES & MONITORING STATIONS		
ID / Permit Number	Description	Latitude / Longitude
1AXCO000.96	DEQ Ambient Water Quality Monitoring Station	39° 16' 53" / 77° 39' 00"
VA0023183	Lovettsville Wastewater Treatment Plant Discharge	39° 16' 53" / 77° 38' 58"
1AXCO000.92	DEQ Ambient Water Quality Monitoring Station	39° 16' 54" / 77° 38' 58"
1AXCO000.39	DEQ Ambient Water Quality Monitoring Station	39° 17' 18" / 77° 39' 14"
VAG406166	Neal Residence – Single Family Home Domestic Discharge	39° 17' 32" / 77° 38' 57"

13. Material Storage: There are no bulk chemicals stored at this facility.

14. **Site Inspection:** Performed by NRO Staff on 1 April 2008 (see **Attachment 4**).

15. **Receiving Stream Water Quality and Water Quality Standards:**

a). Ambient Water Quality Data

The aquatic life and wildlife uses are considered fully supporting for the receiving stream. Fish consumption and recreation uses were not assessed. The receiving stream, Dutchman Creek, UT, is not listed as impaired nor are there any listed impairments downstream of the discharge.

Significant portions of the Chesapeake Bay and its tributaries are listed as impaired on Virginia's 303(d) list of impaired waters for not meeting the aquatic life use support goal and the 2006 Virginia Water Quality Assessment 305(b)/303(d) Integrated Report indicates that much of the mainstem Bay does not fully support this use support goal under Virginia's Water Quality Assessment guidelines. Nutrient enrichment is cited as one of the primary causes of impairment.

In response, the Virginia General Assembly amended the State Water Control Law in 2005 to include the *Chesapeake Bay Watershed Nutrient Credit Exchange Program*. This statute set forth total nitrogen and total phosphorus discharge restrictions within the bay watershed. Concurrently, the State Water Control Board adopted new water quality criteria for the Chesapeake Bay and its tidal tributaries. These actions necessitate the evaluation and the inclusion of nitrogen and phosphorus limits on discharges within the bay watershed.

b). Receiving Stream Water Quality Criteria

Part IX of 9 VAC 25-260(360-550) designates classes and special standards applicable to defined Virginia river basins and sections. The receiving stream Dutchman Creek, UT, is located within Section 10 of the Potomac & Shenandoah River Basins and is classified as Class III water.

At all times, Class III waters must achieve a dissolved oxygen (D.O.) of 4.0 mg/L or greater, a daily average D.O. of 5.0 mg/L or greater, a temperature that does not exceed 32°C and maintain a pH of 6.0-9.0 standard units (S.U.).

Attachment 5 details other water quality criteria applicable to the receiving stream.

Ammonia:

The 7Q10 and 1Q10 of the receiving stream are 0.0 MGD. In cases such as this, effluent pH and temperature data may be used to establish the ammonia water quality standard. Staff evaluated the 2003 - 2008 effluent pH and temperature data and concluded that no significant difference exists from the data used to establish the previous ammonia criteria and subsequent effluent limits.

See **Attachment 6** for the derivation of the 90th percentile values of the effluent pH and temperature data from December 2003 to June 2008.

Metals Criteria:

The Water Quality Criteria for some metals are dependent on the receiving stream's hardness (expressed as mg/L calcium carbonate). The 7Q10 of the receiving stream is zero and no ambient data is available; therefore, effluent hardness data can be used to determine the metals criteria. Hardness data from the previous reissuance, along with one confirmation sample taken in July 2008, was utilized to determine the average hardness. The average hardness of the effluent is 204 mg/L (**Attachment 7**). The hardness-dependent metals criteria shown in **Attachment 5** are based on this value.

Bacteria Criteria:

The Virginia Water Quality Standards (9 VAC 25-260-170 B.) states sewage discharges shall be disinfected to achieve the following criteria:

E. coli bacteria per 100 mL of water shall not exceed the following:

	Geometric Mean ¹	Single Sample Maximum
Freshwater <i>E. coli</i> (N/100 mL)	126	235

¹For two or more samples taken during any calendar month.

c). Receiving Stream Special Standards

The State Water Control Board's Water Quality Standards, River Basin Section Tables (9 VAC 25-260-360, 370 and 380) designates the river basins, sections, classes and special standards for surface waters of the Commonwealth of Virginia. The receiving stream, Dutchman Creek, UT, is located within Section 10 of the Potomac & Shenandoah River Basins. This section has not been designated with a special standard.

d). Threatened or Endangered Species

The Virginia DGIF Fish and Wildlife Information System Database was searched for records to determine if there are threatened or endangered species in the vicinity of the discharge. The following threatened or endangered species were identified within a 2 mile radius of the discharge: Wood Turtle, Upland Sandpiper (song bird), Loggerhead Shrike (song bird), Henslow's Sparrow (song bird), Bald Eagle, Green Floater (freshwater mussel), and the Migrant Loggerhead Shrike (song bird). The proposed limits in this draft permit are protective of the Virginia Water Quality Standards; therefore, protect the threatened and endangered species found near the discharge.

16. Antidegradation (9 VAC 25-260-30):

All state surface waters are provided one of three levels of antidegradation protection. For Tier 1 or existing use protection, existing uses of the water body and the water quality to protect these uses must be maintained. Tier 2 water bodies have water quality that is better than the water quality standards. Significant lowering of the water quality of Tier 2 waters is not allowed without an evaluation of the economic and social impacts. Tier 3 water bodies are exceptional waters and are so designated by regulatory amendment. The antidegradation policy prohibits new or expanded discharges into exceptional waters.

The receiving stream has been classified as Tier 1 based on the 7Q10 and 1Q10 critical flows. Permit limits proposed have been established by determining wasteload allocations which will result in attaining and/or maintaining all water quality criteria which apply to the receiving stream, including narrative criteria. These wasteload allocations will provide for the protection and maintenance of all existing uses.

17. Effluent Screening, Wasteload Allocation, and Effluent Limitation Development:

To determine water quality-based effluent limitations for a discharge, the suitability of data must first be determined. Data is suitable for analysis if one or more representative data points is equal to or above the quantification level ("QL") and the data represent the exact pollutant being evaluated.

Next, the appropriate Water Quality Standards (WQS) are determined for the pollutants in the effluent. Then, the Wasteload Allocations (WLAs) are calculated. In this case since the critical flows 7Q10 and 1Q10 have been determined to be zero, the WLAs are equal to the WQS. The WLA values are then compared with available effluent data to determine the need for effluent limitations. Effluent limitations are needed if the 97th percentile of the daily effluent concentration values is greater than the acute wasteload allocation or if the 97th percentile of the four-day average effluent concentration values is greater than the chronic wasteload allocation. Effluent limitations are based on the most limiting WLA, the required sampling frequency and statistical characteristics of the effluent data.

a). Effluent Screening

Effluent data obtained from Discharge Monitoring Reports (DMRs) has been reviewed and determined to be suitable for evaluation. A summary of the effluent data can be found in the reissuance file.

b). Mixing Zones and Wasteload Allocations (WLAs)

Wasteload allocations (WLAs) are calculated for those parameters in the effluent with the reasonable potential to cause an exceedance of water quality criteria. The basic calculation for establishing a WLA is the steady state complete mix equation:

$$WLA = \frac{C_o [Q_e + (f)(Q_s)] - [(C_s)(f)(Q_s)]}{Q_e}$$

Where:	WLA	=	Wasteload allocation
	C _o	=	In-stream water quality criteria
	Q _e	=	Design flow
	Q _s	=	Critical receiving stream flow (1Q10 for acute aquatic life criteria; 7Q10 for chronic aquatic life criteria; harmonic mean for carcinogen-human health criteria; 30Q10 for ammonia criteria; and 30Q5 for non-carcinogen human health criteria)
	f	=	Decimal fraction of critical flow
	C _s	=	Mean background concentration of parameter in the receiving stream.

The water segment receiving the discharge via Outfall 001 is considered to have a 7Q10 and 1Q10 of 0.0 MGD. As such, there is no mixing zone and the WLA is equal to the C_o.

c). Effluent Limitations, Outfall 001 – Toxic Pollutants

9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Those parameters with WLAs that are near effluent concentrations are evaluated for limits.

The VPDES Permit Regulation at 9 VAC 25-31-230.D. requires that monthly and weekly average limitations be imposed for continuous discharges from POTWs and monthly average and daily maximum limitations be imposed for all other continuous non-POTW discharges.

Ammonia as N/TKN:

As stated earlier, new effluent data is not significantly different from what was used to derive the existing limits. Therefore, the existing ammonia limitations are proposed to be carried forward with this reissuance.

Metals:

No limits were warranted for the 0.250 MGD facility during the last reissuance and there is no new information available. Therefore, it is proposed that the facility conduct sampling for the selected Attachment A parameters once during this permit term and submit the results with the next permit application package. Results will be reviewed by staff to determine if limits and/or monitoring are warranted.

See **Attachment 9** for the selected Attachment A parameters.

d). Effluent Limitations and Monitoring, Outfall 001 – Conventional and Non-Conventional Pollutants

No changes to Dissolved Oxygen (D.O.), Total Suspended Solids (TSS) and pH limitations are proposed for the 0.250 MGD facility.

It is proposed that Biochemical Oxygen Demand-5 day (BOD₅) limitations in lieu of carbonaceous Biochemical Oxygen Demand-5 day (cBOD₅) for the 0.250 MGD facility be imposed to reflect current agency guidance and practice.

Ammonia limitations have been reduced to 2.4 mg/L for the monthly average and 2.6 mg/L for the weekly average maximum.

Dissolved Oxygen and BOD₅ limitations are based on the stream modeling conducted in April 1998 for the 0.250 MGD flow tier and during this reissuance for the proposed 0.375 MGD expansion (**Attachment 10**). Limitations are set to meet the water quality criteria for D.O. in the receiving stream.

It is staff's practice to equate the Total Suspended Solids limits with the BOD₅ limits since the two pollutants are closely related in terms of treatment of domestic sewage.

Oil & Grease monitoring is proposed due to compliance staff's comments/concerns (see **Attachment 4**).

pH limitations are set at the water quality criteria.

E. coli limitations are in accordance with the Water Quality Standards 9 VAC25-260-170.

e). Effluent Annual Average Limitations and Monitoring, Outfall 001 for the 0.375 MGD Facility – Nutrients

VPDES Regulation 9 VAC 25-31-220(D) requires effluent limitations that are protective of both the numerical and narrative water quality standards for state waters, including the Chesapeake Bay.

As discussed in Section 15, significant portions of the Chesapeake Bay and its tributaries are listed as impaired with nutrient enrichment cited as one of the primary causes. Virginia has committed to protecting and restoring the Bay and its tributaries.

The State Water Control Board adopted new Water Quality Criteria for the Chesapeake Bay in March 2005. In addition to the Water Quality Standards, there are three new regulations that necessitate nutrient limitations:

- 9 VAC 25-40 – *Regulation for Nutrient Enriched Waters and Dischargers within the Chesapeake Bay Watershed* requires discharges with design flows of ≥ 0.04 MGD to treat for TN and TP to either BNR levels (TN = 8 mg/L; TP = 1.0 mg/L) or SOA levels (TN = 3.0 mg/L and TP = 0.3 mg/L).
- 9 VAC 25-720 – *Water Quality Management Plan Regulation* sets forth TN and TP maximum wasteload allocations for facilities with design flows of ≥ 0.5 MGD limiting the mass loading from these discharges.
- 9 VAC 25-820 – *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia* was approved by the State Water Control Board on 6 September 2006 and became effective 1 January 2007. This regulation specifies and controls the nitrogen and phosphorus loadings from facilities and specifies facilities that must register under the general permit. Nutrient loadings for those facilities registered under the general permit as well as compliance schedules and other permit requirements, shall be authorized, monitored, limited and otherwise regulated under the general permit and not this individual permit.

Monitoring for Nitrates + Nitrites, Total Kjeldahl Nitrogen, Total Nitrogen and Total Phosphorus are included in this permit for the 0.375 MGD facility. The monitoring is needed to protect the Water Quality Standards of the Chesapeake Bay. Monitoring frequencies are set at the frequencies set forth in 9 VAC 25-820.

Annual average effluent limitations, as well as monthly and year to date calculations for Total Nitrogen and Total Phosphorus are included in this individual permit.

For the 0.375 MGD facility, concentration limits of 8.0mg/L TN annual average and 1.0 mg/L TP annual average are needed based on 9 VAC 40-70.A.(2). Loading limits will be governed by the general permit mentioned above.

f). Effluent Limitations and Monitoring Summary

The effluent limitations are presented in the following tables. Limits were established for BOD₅, Total Suspended Solids, Ammonia, pH, Dissolved Oxygen and *E. coli* for 0.250 MGD facility. Monitoring requirements for Total Nitrogen and Total Phosphorus were carried forward with this reissuance.

Limitations were established for BOD₅, Total Suspended Solids, Ammonia, pH, Dissolved Oxygen, *E. coli*, Total Nitrogen, Total Phosphorus and Nitrates + Nitrites for the 0.375 MGD facility.

Oil & Grease monitoring was included at both flow tiers.

The limit for Total Suspended Solids is based on Best Professional Judgement.

The mass loading (kg/d) for monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 3.785.

The mass loading (lb/d) for TKN monthly and weekly averages were calculated by multiplying the concentration values (mg/L), with the flow values (in MGD) and a conversion factor of 8.3438.

Sample Type and Frequency are in accordance with the recommendations in the VPDES Permit Manual.

18. Antibalancing:

All limits in this permit are at least as stringent as those previously established. Backsliding does not apply to this reissuance.

19a. Effluent Limitations/Monitoring Requirements:

Design flow is 0.250 MGD.

Effective Dates: During the period beginning with the permit's effective date and lasting until the expiration date or the issuance of the CTO for the 0.375 MGD facility, whichever comes first.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS			
		Monthly Average		Weekly Average		Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL		N/A		N/A	NL	Continuous	TIRE
pH	3	N/A		N/A		6.0 S.U.	9.0 S.U.	1/D	Grab
BOD ₅	3,4	15 mg/L	14 kg/day	22 mg/L	21 kg/day	N/A	N/A	3D/W	8H-C
Total Suspended Solids (TSS)	2	15 mg/L	14 kg/day	22 mg/L	21 kg/day	N/A	N/A	3D/W	8H-C
DO	3,4	N/A		NA		6.0 mg/L	N/A	1/D	Grab
Ammonia, as N	3,4	2.4 mg/L		3.2 mg/L		N/A	N/A	3D/W	8H-C
<i>E. coli</i> (Geometric Mean)	3,5	126 n/100mLs		N/A		N/A	N/A	1/W	Grab
Oil & Grease	2,6	N/A		N/A		N/A	NL	1/Q	Grab
Total Nitrogen	2	NL mg/L		NL mg/L		N/A	N/A	1/M	8H-C
Total Phosphorus	2	NL mg/L		NL mg/L		N/A	N/A	1/M	8H-C

The basis for the limitations codes are:

- | | | |
|--|---|---|
| 1. Federal Effluent Requirements | <i>MGD</i> = Million gallons per day. | <i>1/D</i> = Once every day. |
| 2. Best Professional Judgement | <i>N/A</i> = Not applicable. | <i>3D/W</i> = Three days a week. |
| 3. Water Quality Standards | <i>NL</i> = No limit; monitor and report. | <i>1/W</i> = Once every week. |
| 4. Stream Model – Attachment 10 | <i>S.U.</i> = Standard units. | <i>1/M</i> = Once per month. |
| 5. See Section 21.n. | <i>TIRE</i> = Totalizing, indicating and recording equipment. | <i>1/Q</i> = Once every calendar quarter. |
| 6. See Section 21.o. | | |

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

19b. Effluent Limitations/Monitoring Requirements:

Design flow is 0.375 MGD.

Effective Dates: During the period beginning with the issuance of the CTO for the 0.375 MGD facility and lasting until the permit expiration date.

PARAMETER	BASIS FOR LIMITS	DISCHARGE LIMITATIONS				MONITORING REQUIREMENTS	
		Monthly Average	Weekly Average	Minimum	Maximum	Frequency	Sample Type
Flow (MGD)	NA	NL	N/A	N/A	NL	Continuous	TIRE
pH	3	N/A	N/A	6.0 S.U.	9.0 S.U.	1/D	Grab
BOD ₅	3,4	15 mg/L 21 kg/day	22 mg/L 31 kg/day	N/A	N/A	3D/W	8H-C
Total Suspended Solids (TSS)	2	15 mg/L 21 kg/day	22 mg/L 31 kg/day	N/A	N/A	3D/W	8H-C
DO	3,4	N/A	NA	6.0 mg/L	N/A	1/D	Grab
Ammonia, as N	3,4	2.4 mg/L	3.2 mg/L	N/A	N/A	3D/W	8H-C
<i>E. coli</i> (Geometric Mean)	3,5	126 n/100mLs	N/A	N/A	N/A	2/W	Grab
Oil & Grease	2,6	N/A	N/A	N/A	NL	1/Q	Grab
Nitrate+Nitrite, as N	3,7	NL mg/L	N/A	N/A	N/A	2/M	8H-C
Total Nitrogen ^a .	3,7	NL mg/L	N/A	N/A	N/A	2/M	Calculated
Total Nitrogen – Year to Date ^b .	3,7	NL mg/L	N/A	N/A	N/A	1/M	Calculated
Total Nitrogen - Calendar Year ^b .	3,7	8.0 mg/L	N/A	N/A	N/A	1/Y	Calculated
Total Phosphorus	3	NL mg/L	N/A	N/A	N/A	2/M	8H-C
Total Phosphorus – Year to Date ^b .	3,7	NL mg/L	N/A	N/A	N/A	1/M	Calculated
Total Phosphorus - Calendar Year ^b .	3,7	1.0 mg/L	N/A	N/A	N/A	1/Y	Calculated

The basis for the limitations codes are:

- | | | |
|--|---|--|
| 1. Federal Effluent Requirements | <i>MGD</i> = Million gallons per day. | <i>1/D</i> = Once every day. |
| 2. Best Professional Judgement | <i>N/A</i> = Not applicable. | <i>3D/W</i> = Three days a week. |
| 3. Water Quality Standards | <i>NL</i> = No limit; monitor and report. | <i>2/W</i> = Twice per week. |
| 4. Stream Model – Attachment 10 | <i>S.U.</i> = Standard units. | <i>2/M</i> = Twice per month, >7 days apart. |
| 5. See Section 21.n. | <i>TIRE</i> = Totalizing, indicating and recording equipment. | <i>1/M</i> = Once every month. |
| 6. See Section 21.o. | | <i>1/Q</i> = Once every calendar quarter. |
| 7. 9 VAC 25-40 (Nutrient Regulation) | | <i>1/Y</i> = Once every year. |

8H-C = A flow proportional composite sample collected manually or automatically, and discretely or continuously, for the entire discharge of the monitored 8-hour period. Where discrete sampling is employed, the permittee shall collect a minimum of eight (8) aliquots for compositing. Discrete sampling may be flow proportioned either by varying the time interval between each aliquot or the volume of each aliquot. Time composite samples consisting of a minimum eight (8) grab samples obtained at hourly or smaller intervals may be collected where the permittee demonstrates that the discharge flow rate (gallons per minute) does not vary by 10% or more during the monitored discharge.

Grab = An individual sample collected over a period of time not to exceed 15-minutes.

a. Total Nitrogen = Sum of TKN plus Nitrate+Nitrite

b. See Section 20 for the calculation of the Nutrient Calculations.

20. Other Permit Requirements:

Part I.B. of the permit contains quantification levels and compliance reporting instructions.

9 VAC 25-31-190.L.4.c. requires an arithmetic mean for measurement averaging and 9 VAC 25-31-220.D. requires limits be imposed where a discharge has a reasonable potential to cause or contribute to an in-stream excursion of water quality criteria. Specific analytical methodologies for toxics are listed in this permit section as well as quantification levels (QLs) necessary to demonstrate compliance with applicable permit limitations or for use in future evaluations to determine if the pollutant has reasonable potential to cause or contribute to a violation. Required averaging methodologies are also specified.

The calculations for the Nitrogen and Phosphorus parameters shall be in accordance with the calculations set forth in 9 VAC 25-820 *General Virginia Pollutant Discharge Elimination System (VPDES) Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Bay Watershed in Virginia*. §62.1-44.19:13 of the Code of Virginia defines how annual nutrient loads are to be calculated; this is carried forward in 9 VAC 25-820-70. As annual concentrations (as opposed to loads) are limited in the individual permit, these reporting calculations are intended to reconcile the reporting calculations between the permit programs, as the permittee is collecting a single set of samples for the purpose of ascertaining compliance with two permits.

21. Other Special Conditions:

- a) 95% Capacity Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.B.2. requires all POTWs and PVOTWs develop and submit a plan of action to DEQ when the monthly average influent flow to their sewage treatment plant reaches 95% or more of the design capacity authorized in the permit for each month of any three consecutive month period. This facility is a POTW.
- b) Indirect Dischargers. Required by VPDES Permit Regulation, 9 VAC 25-31-280 B.9 for POTWs and PVOTWs that receive waste from someone other than the owner of the treatment works.
- c) O&M Manual Requirement. Required by Code of Virginia §62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790; VPDES Permit Regulation, 9 VAC 25-31-190.E. Within 90 days of the issuance of the CTO for the 0.375 MGD facility, the permittee shall submit for approval an Operations and Maintenance (O&M) Manual to the Department of Environmental Quality, Northern Regional Office (DEQ-NRO). Future changes to the facility must be addressed by the submittal of a revised O&M Manual within 90 days of the changes. Non-compliance with the O&M Manual shall be deemed a violation of the permit.
- d) CTC, CTO Requirement. The Code of Virginia § 62.1-44.19; Sewage Collection and Treatment Regulations, 9 VAC 25-790 requires that all treatment works treating wastewater obtain a Certificate to Construct prior to commencing construction and to obtain a Certificate to Operate prior to commencing operation of the treatment works.
- e) Licensed Operator Requirement. The Code of Virginia at §54.1-2300 et seq. and the VPDES Permit Regulation at 9 VAC 25-31-200 D, and Rules and Regulations for Waterworks and Wastewater Works Operators (18 VAC 160-20-10 et seq.) requires licensure of operators. This facility requires a Class III operator at the 0.250 MGD and 0.375 MGD flow tiers.
- f) Reliability Class. The Sewage Collection and Treatment Regulation at 9 VAC 25-790 requires sewerage works achieve a certain level of reliability in order to protect water quality and public health consequences in the event of component or system failure. The facility is required to meet a reliability Class I.
- g) Water Quality Criteria Reopener. The VPDES Permit Regulation at 9 VAC 25-31-220 D. requires establishment of effluent limitations to ensure attainment/maintenance of receiving stream water quality criteria. Should effluent monitoring indicate the need for any water quality-based limitations, this permit may be modified or alternatively revoked and reissued to incorporate appropriate limitations.
- h) Water Quality Criteria Monitoring. State Water Control Law §62.1-44.21 authorizes the Board to request information needed to determine the discharge's impact on State waters. States are required to review data on discharges to identify actual or potential toxicity problems or the attainment of water quality goals, according to 40 CFR Part 131, Water Quality Standards, subpart 131.11. To ensure that water quality criteria are maintained, the permittee is required to analyze the facility's effluent for the substances noted in Attachment A of this VPDES permit once during this permit term and submit the results on or before 12 July 2014. See **Attachment 9**.
- i) Sludge Reopener. The VPDES Permit Regulation at 9 VAC 25-31-200.C.4. requires all permits issued to treatment works treating domestic sewage (including sludge-only facilities) include a reopener clause allowing incorporation of any applicable standard for sewage sludge use or disposal promulgated under Section 405(d) of the CWA. The facility includes a sewage treatment works.

- j) Sludge Use and Disposal. The VPDES Permit Regulation at 9 VAC 25-31-100.P., 220.B.2., and 420-720, and 40 CFR Part 503 require all treatment works treating domestic sewage to submit information on their sludge use and disposal practices and to meet specified standards for sludge use and disposal. The facility includes a treatment works treating domestic sewage.
- k) E3/E4. 9 VAC 25-40-70 B authorizes DEQ to approve an alternate compliance method to the technology-based effluent concentration limitations as required by subsection A of this section. Such alternate compliance method shall be incorporated into the permit of an Exemplary Environmental Enterprise (E3) facility or an Extraordinary Environmental Enterprise (E4) facility to allow the suspension of applicable technology-based effluent concentration limitations during the period the E3 or E4 facility has a fully implemented environmental management system that includes operation of installed nutrient removal technologies at the treatment efficiency levels for which they were designed.
- l) Nutrient Reopener. 9 VAC 25-40-70 A authorizes DEQ to include technology-based annual concentration limits in the permits of facilities that have installed nutrient control equipment, whether by new construction, expansion or upgrade. 9 VAC 25-31-390 A authorizes DEQ to modify VPDES permits to promulgate amended water quality standards.
- m) Inflow & Infiltration Initiative. The Town of Lovettsville shall administer and fund a rehabilitation program to address the Inflow and Infiltration (I&I) problems in the Town's sanitary sewer collection system. An annual report shall be submitted to DEQ-NRO before or on August 10th of every year detailing the previous fiscal year's activities.

This report shall include, but is not limited to:

- The total funds allocated for the I & I program during the previous fiscal year;
- The fund's balance, if applicable;
- A summary of all studies/surveys conducted during the previous fiscal year;
- A summary of completed rehabilitation projects; and
- Projected/proposed course of actions for the upcoming fiscal year.

The permittee shall submit five (5) annual reports during this permit term; which thereafter, upon satisfactorily fulfilling the above, the Town may submit a request to DEQ-NRO that this requirement be removed.

- n) Bacteria Sampling Frequency. The monitoring frequency of once per week (1/W) has been carried forward with this reissuance for the 0.250 MGD plant. The permittee has requested and it is proposed that a sampling frequency of twice per week (2/W) be imposed upon issuance of the CTO for the 0.375 MGD plant. However, should the permittee be issued a Warning Letter, a Notice of Violation or be subject to an active enforcement action related to effluent limitation violations for bacteria at either flow tier, the monitoring frequency shall be increased to three days per week (3D/W) upon issuance of the letter, notice or initiation of the enforcement action and shall remain in effect until the permit's expiration date.
- o) Oil & Grease Monitoring. The permittee shall complete at least eight (8) quarterly sampling events for Oil & Grease during this permit term. The quarterly monitoring periods shall be January through March, April through June, July through September and October through December. The DMR shall be submitted no later than the 10th day of the month following the monitoring period.

If a sampling result exceeds 15 mg/L, the permittee must submit notification to DEQ-NRO within 30 days of receiving the data outlining actions taken to mitigate the Oil & Grease.

If Oil & Grease monitoring results exceed 15 mg/L for two (2) consecutive sampling events, a monthly limit of 15 mg/L shall be placed into the permit.

If all eight (8) quarterly sample results for Oil & Grease do not exceed 15 mg/L, the permittee may submit a written request to DEQ-NRO for a reduction in the sampling frequency to once per year for the remainder of the permit term.

- 22. Permit Section Part II:** Part II of the permit contains standard conditions that appear in all VPDES Permits. In general, these standard conditions address the responsibilities of the permittee, reporting requirements, testing procedures and records retention.

23. Changes to the Permit from the Previously Issued Permit:**a) Special Conditions:**

The following Special Conditions were included with this reissuance:

- Water Quality Criteria Monitoring;
- E3/E4;
- Nutrient Reopener;
- Inflow & Infiltration Initiative;
- Bacteria Sampling Frequency; and
- Oil & Grease Monitoring.

b) Monitoring and Effluent Limitations:

- A proposed flow tier of 0.375 MGD was included with this reissuance.
- Limitations/monitoring for Total Nitrogen, Total Phosphorus and Nitrates + Nitrites were included for the proposed 0.375 MGD flow tier based on 9 VAC 25-40 and 9 VAC 25-820.
- Temperature monitoring was removed with this reissuance.
- Included Oil & Grease monitoring based on staff comments and recommendations.
- The cBOD₅ limitation for the 0.250 MGD flow tier was changed to BOD₅ to reflect current agency guidance and practice.

24. Variances/Alternate Limits or Conditions:

- E. coli monitoring frequency at the 0.250 MGD flow tier of 1/W was carried forward with this reissuance.
- E. coli monitoring frequency at the 0.375 MGD flow tier of 2/W was requested by the permittee and is proposed with this reissuance.

25. Public Notice Information:

First Public Notice Date: 10 December 2008 Second Public Notice Date: 17 December 2008

Public Notice Information is required by 9 VAC 25-31-280 B. All pertinent information is on file and may be inspected and copied by contacting the: DEQ Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193, Telephone No. (703) 583-3873, ddfrasier@deq.virginia.gov. See **Attachment 11** for a copy of the public notice document.

Persons may comment in writing or by email to the DEQ on the proposed permit action, and may request a public hearing, during the comment period. Comments shall include the name, address, and telephone number of the writer and shall contain a complete, concise statement of the factual basis for comments. Only those comments received within this period will be considered. The DEQ may decide to hold a public hearing if public response is significant. Requests for public hearings shall state the reason why a hearing is requested, the nature of the issues proposed to be raised in the public hearing and a brief explanation of how the requester's interests would be directly and adversely affected by the proposed permit action. Following the comment period, the Board will make a determination regarding the proposed permit action. This determination will become effective, unless the DEQ grants a public hearing. Due notice of any public hearing will be given.

26. 303 (d) Listed Stream Segments and Total Max. Daily Loads (TMDL):

The receiving stream, Dutchman Creek, UT, is not listed as impaired nor are there any downstream impairments or TMDLs associated with this discharge.

TMDL Reopener: This special condition is to allow the permit to be reopened if necessary to bring it into compliance with any applicable TMDL that may be developed and approved for the receiving stream.

27. Additional Comments:

Previous Board Action(s): At the time of this Fact Sheet, a Consent Special Order was being negotiated between the DEQ and the Town of Lovettsville addressing effluent violations since December 2007. These violations were attributed to high flows at the plant due to inflow and infiltration problems in the collection system.

Staff Comments: Compliance staff noted Oil & Grease concerns during their inspection.

Public Comment: No comments were received during the public notice.

EPA Checklist: The checklist can be found in **Attachment 12**.

Fact Sheet Attachments
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Lovettsville Town Wastewater Treatment Facility
VA0023183
2008 Reissuance

Attachment 1	Flow Frequency Determination
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Attachment 5	Virginia Water Quality Criteria
Attachment 6	Effluent pH and Temperature Data
Attachment 7	Effluent Hardness Data
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MEMORANDUM

JUN 4 1998

DEPARTMENT OF ENVIRONMENTAL QUALITY - WATER DIVISION
Water Quality Assessments and Planning
629 E. Main Street P.O. Box 10009 Richmond, Virginia 23240

Northern VA. Region
Department of Env. Quality

SUBJECT: Flow Frequency Determination
Lovetttsville Aerated Lagoon - #VA0023183

TO: April Young, NRO

FROM: Paul E. Herman, P.E., WQAP *Paul*

DATE: June 3, 1998

COPIES: Ron Gregory, Charles Martin, File

This memo supercedes my June 15, 1993 memo and July 23, 1993 amendment memo to Joan Crowther concerning the subject VPDES permit.

The Lovetttsville Aerated Lagoon discharges to an unnamed tributary to the Dutchman Creek near Lovetttsville, VA. Stream flow frequencies are required at this site by the permit writer for the purpose of calculating effluent limitations for the VPDES permit.

At the discharge point, the receiving stream flow was observed to be zero during a site visit in August 1997. Therefore, the flow frequencies for the unnamed tributary are 0.0 cfs for the 1Q10, 7Q10, 30Q5, high flow 1Q10, high flow 7Q10, and harmonic mean. Flow frequencies have been determined for the Dutchmans Creek at a point just above its confluence with the unnamed discharge receiving stream.

The USGS conducted several flow measurements on the Piney Run during the late 1960's. The measurements were made at the Route 671 bridge near the mouth of Piney Run. The measurements made by the USGS correlated very well with the same day daily mean values from the continuous record gage on the Goose Creek near Leesburg, VA #01644000. The measurements and daily mean values were plotted by the USGS on a logarithmic graph and a best fit line was drawn through the data points. The required flow frequencies from the reference gage were plotted on the regression line and the associated flow frequencies at the measurement site were determined from the graph.

The flow frequencies at the discharge point were determined by using the values at the measurement site and adjusting them by proportional drainage areas. The data for the reference gage, the measurement site and the discharge point are presented below:

Attachment 1

Goose Creek near Leesburg, VA (#01644000):

Drainage Area = 332 mi²
1Q10 = 1.6 cfs High Flow 1Q10 = 16 cfs
7Q10 = 1.9 cfs High Flow 7Q10 = 23 cfs
30Q5 = 6.9 cfs HM = 33 cfs

Piney Run near Lovettsville, VA (#01636690):

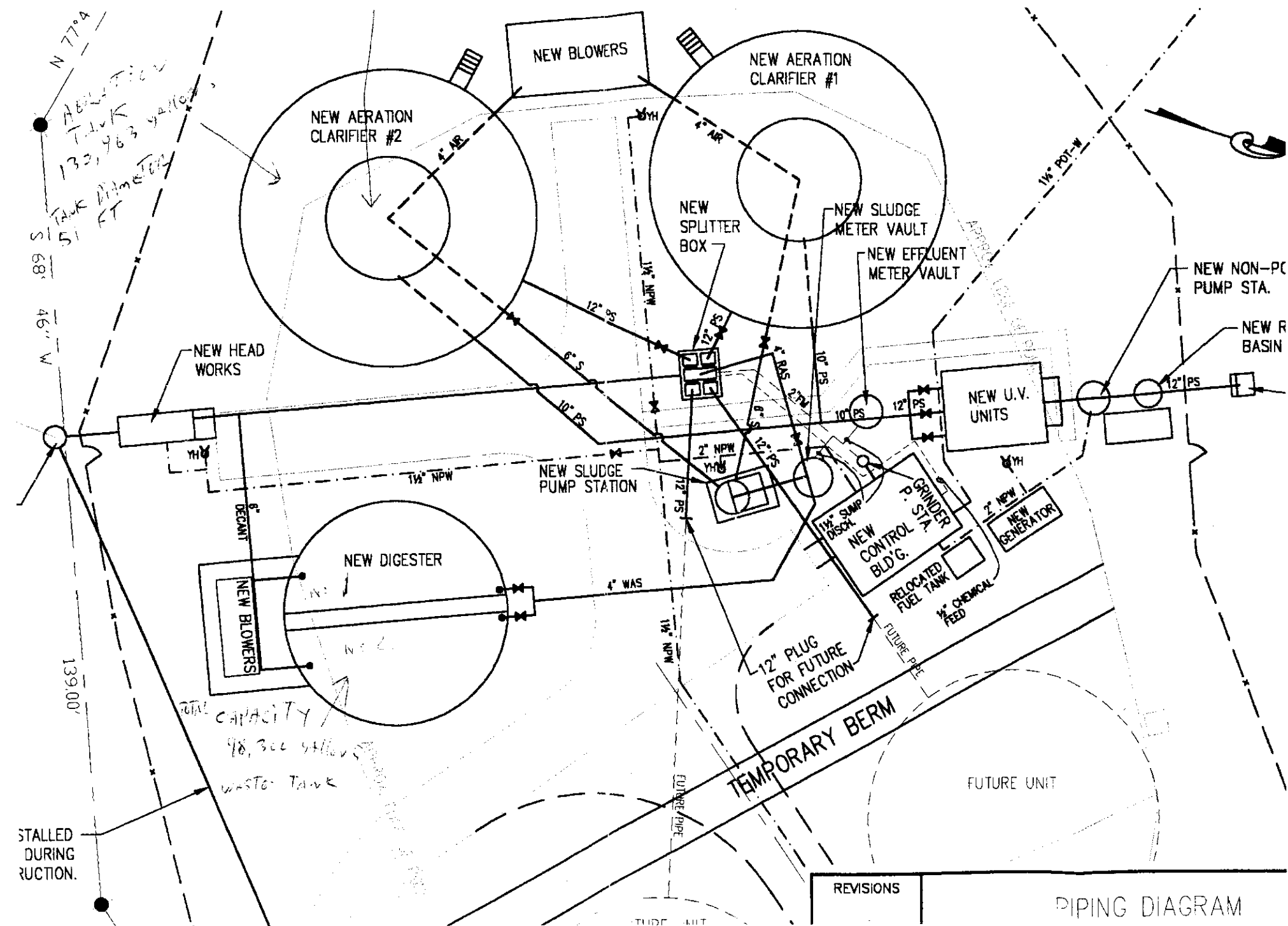
Drainage Area = 13.7 mi²
1Q10 = 0.08 cfs High Flow 1Q10 = 0.72 cfs
7Q10 = 0.09 cfs High Flow 7Q10 = 1.0 cfs
30Q5 = 0.31 cfs HM = 1.5 cfs

Dutchman Creek above UT discharge receiving stream:

Drainage Area = 6.98 mi²
1Q10 = 0.04 cfs High Flow 1Q10 = 0.37 cfs
7Q10 = 0.05 cfs High Flow 7Q10 = 0.51 cfs
30Q5 = 0.16 cfs HM = 0.76 cfs

The high flow months are December through May. This analysis assumes there are no significant discharges, withdrawals or springs influencing the flow in the Dutchman creek upstream of the UT discharge receiving stream.

If there are any questions concerning this analysis, please let me know.



Problems identified at last inspection: **September 14, 2004**

Corrected

Not Corrected

- | | | |
|--|-------------------------------|-------------------------------|
| <ol style="list-style-type: none"> 1. The DEQ-NVRO has not received an updated O&M Manual since the facility upgrade. Please submit a copy of the current O&M Manual to this office. 2. The Inflow and Infiltration (I/I) problem in the collection system is of concern. Please submit a plan of action/progress report to this office addressing this matter.
Requested items were provided at an Enforcement meeting with the Town of Lovettsville on April 1, 2008. | <div>[X]</div> <div>[X]</div> | <div>[]</div> <div>[]</div> |
|--|-------------------------------|-------------------------------|

SUMMARY**Comments:**

- **This facility is currently in Enforcement for permit violations related to Inflow and Infiltration in the collection system.**
- **Plans and Specifications for a plant expansion have been submitted to the DEQ's Office of Wastewater Engineering at the Northern Regional Office.**
- **While the town does have a grease ordinance in place (according to Mayor Walker), enforcement does not appear to be stringent. The plant had a lot of grease in the tanks, which appeared to be in the final effluent as well.**
- **A sludge hauler is contracted about once per month to empty the digesters, clean any sediment out of the UV system and non potable pit, and remove grease and scum from the clarifier scum trough. The aeration basins and clarifiers are cleaned off as needed. The truck is emptied at the Blue Plains Interceptor.**

Recommendations for action:

- **Grease appears to have become a significant problem affecting the operation of the plant in recent months. Please submit a copy of the Town of Lovettsville's grease ordinance and a schedule of recent inspections of the commercial kitchens in the town.**
- **The intensity meters and alarm indicators for the UV system should be either repaired to work properly or disconnected. If the staff does not use the intensity meters to evaluate the effectiveness of the UV bulbs, the preferred method of verifying the effectiveness of disinfection must be explained in the O&M Manual.**

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Lovettsville Town WWTF

Permit No.: VA0023183

Receiving Stream: Ducthman Creek, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) = 25 mg/L
 90% Temperature (Annual) = 25 deg C
 90% Temperature (Wet season) = deg C
 90% Maximum pH = 8 SU
 10% Maximum pH = SU
 Tier Designation (1 or 2) = 1
 Public Water Supply (PWS) Y/N? = n
 Trout Present Y/N? = n
 Early Life Stages Present Y/N? = y

Stream Flows

1Q10 (Annual) = 0 MGD
 7Q10 (Annual) = 0 MGD
 30Q10 (Annual) = 0 MGD
 1Q10 (Wet season) = 0 MGD
 30Q10 (Wet season) = 0 MGD
 30Q5 = 0 MGD
 Harmonic Mean = 0 MGD
 Annual Average = 0 MGD

Mixing Information

Annual - 1Q10 Mix = 100 %
 - 7Q10 Mix = 100 %
 - 30Q10 Mix = 100 %
 Wet Season - 1Q10 Mix = 100 %
 - 30Q10 Mix = 100 %

Effluent Information

Mean Hardness (as CaCO3) = 204 mg/L
 90% Temp (Annual) = 23.3 deg C
 90% Temp (Wet season) = deg C
 90% Maximum pH = 7.8 SU
 10% Maximum pH = SU
 Discharge Flow = 0.25 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	1.21E+01	1.81E+00	na	--	1.2E+01	1.8E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	1.8E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.21E+01	3.18E+00	na	--	1.2E+01	3.2E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	3.2E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	8.8E+00	2.0E+00	na	--	8.8E+00	2.0E+00	na	--	--	--	--	--	--	--	--	--	8.8E+00	2.0E+00	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	1.0E+03	1.3E+02	na	--	1.0E+03	1.3E+02	na	--	--	--	--	--	--	--	--	--	1.0E+03	1.3E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	2.6E+01	1.6E+01	na	--	2.6E+01	1.6E+01	na	--	--	--	--	--	--	--	--	--	2.6E+01	1.6E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p- dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	2.9E+02	3.3E+01	na	--	2.9E+02	3.3E+01	na	--	--	--	--	--	--	--	--	--	2.9E+02	3.3E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	3.3E+02	3.7E+01	na	4.6E+03	3.3E+02	3.7E+01	na	4.6E+03	--	--	--	--	--	--	--	--	3.3E+02	3.7E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.2E+01	--	na	--	1.2E+01	--	na	--	--	--	--	--	--	--	--	--	1.2E+01	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane ^C	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	2.1E+02	2.2E+02	na	6.9E+04	2.1E+02	2.2E+02	na	6.9E+04	--	--	--	--	--	--	--	--	2.1E+02	2.2E+02	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	1.2E+00
Chromium III	8.0E+01
Chromium VI	6.4E+00
Copper	9.9E+00
Iron	na
Lead	2.0E+01
Manganese	na
Mercury	5.1E-02
Nickel	2.2E+01
Selenium	3.0E+00
Silver	4.7E+00
Zinc	8.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

FRESHWATER WATER QUALITY CRITERIA / WASTELOAD ALLOCATION ANALYSIS

Facility Name: Lovettsville Town WWTF

Permit No.: VA0023183

Receiving Stream: Ducthman Creek, UT

Version: OWP Guidance Memo 00-2011 (8/24/00)

Stream Information

Mean Hardness (as CaCO3) =	25 mg/L
90% Temperature (Annual) =	25 deg C
90% Temperature (Wet season) =	deg C
90% Maximum pH =	8 SU
10% Maximum pH =	SU
Tier Designation (1 or 2) =	1
Public Water Supply (PWS) Y/N? =	n
Trout Present Y/N? =	n
Early Life Stages Present Y/N? =	y

Stream Flows

1Q10 (Annual) =	0 MGD
7Q10 (Annual) =	0 MGD
30Q10 (Annual) =	0 MGD
1Q10 (Wet season) =	0 MGD
30Q10 (Wet season) =	0 MGD
30Q5 =	0 MGD
Harmonic Mean =	0 MGD
Annual Average =	0 MGD

Mixing Information

Annual - 1Q10 Mix =	100 %
- 7Q10 Mix =	100 %
- 30Q10 Mix =	100 %
Wet Season - 1Q10 Mix =	100 %
- 30Q10 Mix =	100 %

Effluent Information

Mean Hardness (as CaCO3) =	204 mg/L
90% Temp (Annual) =	23.3 deg C
90% Temp (Wet season) =	deg C
90% Maximum pH =	7.8 SU
10% Maximum pH =	SU
Discharge Flow =	0.375 MGD

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Acenaphthene	0	--	--	na	2.7E+03	--	--	na	2.7E+03	--	--	--	--	--	--	--	--	--	--	na	2.7E+03
Acrolein	0	--	--	na	7.8E+02	--	--	na	7.8E+02	--	--	--	--	--	--	--	--	--	--	na	7.8E+02
Acrylonitrile ^C	0	--	--	na	6.6E+00	--	--	na	6.6E+00	--	--	--	--	--	--	--	--	--	--	na	6.6E+00
Aldrin ^C	0	3.0E+00	--	na	1.4E-03	3.0E+00	--	na	1.4E-03	--	--	--	--	--	--	--	--	3.0E+00	--	na	1.4E-03
Ammonia-N (mg/l) (Yearly)	0	1.21E+01	1.81E+00	na	--	1.2E+01	1.8E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	1.8E+00	na	--
Ammonia-N (mg/l) (High Flow)	0	1.21E+01	3.18E+00	na	--	1.2E+01	3.2E+00	na	--	--	--	--	--	--	--	--	--	1.2E+01	3.2E+00	na	--
Anthracene	0	--	--	na	1.1E+05	--	--	na	1.1E+05	--	--	--	--	--	--	--	--	--	--	na	1.1E+05
Antimony	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
Arsenic	0	3.4E+02	1.5E+02	na	--	3.4E+02	1.5E+02	na	--	--	--	--	--	--	--	--	--	3.4E+02	1.5E+02	na	--
Barium	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Benzene ^C	0	--	--	na	7.1E+02	--	--	na	7.1E+02	--	--	--	--	--	--	--	--	--	--	na	7.1E+02
Benzidine ^C	0	--	--	na	5.4E-03	--	--	na	5.4E-03	--	--	--	--	--	--	--	--	--	--	na	5.4E-03
Benzo (a) anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (b) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (k) fluoranthene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Benzo (a) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Bis(2-Chloroethyl) Ether	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Bis(2-Chloroisopropyl) Ether	0	--	--	na	1.7E+05	--	--	na	1.7E+05	--	--	--	--	--	--	--	--	--	--	na	1.7E+05
Bromoform ^C	0	--	--	na	3.6E+03	--	--	na	3.6E+03	--	--	--	--	--	--	--	--	--	--	na	3.6E+03
Butylbenzylphthalate	0	--	--	na	5.2E+03	--	--	na	5.2E+03	--	--	--	--	--	--	--	--	--	--	na	5.2E+03
Cadmium	0	8.8E+00	2.0E+00	na	--	8.8E+00	2.0E+00	na	--	--	--	--	--	--	--	--	--	8.8E+00	2.0E+00	na	--
Carbon Tetrachloride ^C	0	--	--	na	4.4E+01	--	--	na	4.4E+01	--	--	--	--	--	--	--	--	--	--	na	4.4E+01
Chlordane ^C	0	2.4E+00	4.3E-03	na	2.2E-02	2.4E+00	4.3E-03	na	2.2E-02	--	--	--	--	--	--	--	--	2.4E+00	4.3E-03	na	2.2E-02
Chloride	0	8.6E+05	2.3E+05	na	--	8.6E+05	2.3E+05	na	--	--	--	--	--	--	--	--	--	8.6E+05	2.3E+05	na	--
TRC	0	1.9E+01	1.1E+01	na	--	1.9E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.9E+01	1.1E+01	na	--
Chlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Chlorodibromomethane ^C	0	--	--	na	3.4E+02	--	--	na	3.4E+02	--	--	--	--	--	--	--	--	--	--	na	3.4E+02
Chloroform ^C	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
2-Chloronaphthalene	0	--	--	na	4.3E+03	--	--	na	4.3E+03	--	--	--	--	--	--	--	--	--	--	na	4.3E+03
2-Chlorophenol	0	--	--	na	4.0E+02	--	--	na	4.0E+02	--	--	--	--	--	--	--	--	--	--	na	4.0E+02
Chlorpyrifos	0	8.3E-02	4.1E-02	na	--	8.3E-02	4.1E-02	na	--	--	--	--	--	--	--	--	--	8.3E-02	4.1E-02	na	--
Chromium III	0	1.0E+03	1.3E+02	na	--	1.0E+03	1.3E+02	na	--	--	--	--	--	--	--	--	--	1.0E+03	1.3E+02	na	--
Chromium VI	0	1.6E+01	1.1E+01	na	--	1.6E+01	1.1E+01	na	--	--	--	--	--	--	--	--	--	1.6E+01	1.1E+01	na	--
Chromium, Total	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Chrysene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Copper	0	2.6E+01	1.6E+01	na	--	2.6E+01	1.6E+01	na	--	--	--	--	--	--	--	--	--	2.6E+01	1.6E+01	na	--
Cyanide	0	2.2E+01	5.2E+00	na	2.2E+05	2.2E+01	5.2E+00	na	2.2E+05	--	--	--	--	--	--	--	--	2.2E+01	5.2E+00	na	2.2E+05
DDD ^C	0	--	--	na	8.4E-03	--	--	na	8.4E-03	--	--	--	--	--	--	--	--	--	--	na	8.4E-03
DDE ^C	0	--	--	na	5.9E-03	--	--	na	5.9E-03	--	--	--	--	--	--	--	--	--	--	na	5.9E-03
DDT ^C	0	1.1E+00	1.0E-03	na	5.9E-03	1.1E+00	1.0E-03	na	5.9E-03	--	--	--	--	--	--	--	--	1.1E+00	1.0E-03	na	5.9E-03
Demeton	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Dibenz(a,h)anthracene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Dibutyl phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
Dichloromethane (Methylene Chloride) ^C	0	--	--	na	1.6E+04	--	--	na	1.6E+04	--	--	--	--	--	--	--	--	--	--	na	1.6E+04
1,2-Dichlorobenzene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,3-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
1,4-Dichlorobenzene	0	--	--	na	2.6E+03	--	--	na	2.6E+03	--	--	--	--	--	--	--	--	--	--	na	2.6E+03
3,3-Dichlorobenzidine ^C	0	--	--	na	7.7E-01	--	--	na	7.7E-01	--	--	--	--	--	--	--	--	--	--	na	7.7E-01
Dichlorobromomethane ^C	0	--	--	na	4.6E+02	--	--	na	4.6E+02	--	--	--	--	--	--	--	--	--	--	na	4.6E+02
1,2-Dichloroethane ^C	0	--	--	na	9.9E+02	--	--	na	9.9E+02	--	--	--	--	--	--	--	--	--	--	na	9.9E+02
1,1-Dichloroethylene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
1,2-trans-dichloroethylene	0	--	--	na	1.4E+05	--	--	na	1.4E+05	--	--	--	--	--	--	--	--	--	--	na	1.4E+05
2,4-Dichlorophenol	0	--	--	na	7.9E+02	--	--	na	7.9E+02	--	--	--	--	--	--	--	--	--	--	na	7.9E+02
2,4-Dichlorophenoxy acetic acid (2,4-D)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
1,2-Dichloropropane ^C	0	--	--	na	3.9E+02	--	--	na	3.9E+02	--	--	--	--	--	--	--	--	--	--	na	3.9E+02
1,3-Dichloropropene	0	--	--	na	1.7E+03	--	--	na	1.7E+03	--	--	--	--	--	--	--	--	--	--	na	1.7E+03
Dieldrin ^C	0	2.4E-01	5.6E-02	na	1.4E-03	2.4E-01	5.6E-02	na	1.4E-03	--	--	--	--	--	--	--	--	2.4E-01	5.6E-02	na	1.4E-03
Diethyl Phthalate	0	--	--	na	1.2E+05	--	--	na	1.2E+05	--	--	--	--	--	--	--	--	--	--	na	1.2E+05
Di-2-Ethylhexyl Phthalate ^C	0	--	--	na	5.9E+01	--	--	na	5.9E+01	--	--	--	--	--	--	--	--	--	--	na	5.9E+01
2,4-Dimethylphenol	0	--	--	na	2.3E+03	--	--	na	2.3E+03	--	--	--	--	--	--	--	--	--	--	na	2.3E+03
Dimethyl Phthalate	0	--	--	na	2.9E+06	--	--	na	2.9E+06	--	--	--	--	--	--	--	--	--	--	na	2.9E+06
Di-n-Butyl Phthalate	0	--	--	na	1.2E+04	--	--	na	1.2E+04	--	--	--	--	--	--	--	--	--	--	na	1.2E+04
2,4 Dinitrophenol	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
2-Methyl-4,6-Dinitrophenol	0	--	--	na	7.65E+02	--	--	na	7.7E+02	--	--	--	--	--	--	--	--	--	--	na	7.7E+02
2,4-Dinitrotoluene ^C	0	--	--	na	9.1E+01	--	--	na	9.1E+01	--	--	--	--	--	--	--	--	--	--	na	9.1E+01
Dioxin (2,3,7,8- tetrachlorodibenzo-p- dioxin) (ppq)	0	--	--	na	1.2E-06	--	--	na	na	--	--	--	--	--	--	--	--	--	--	na	na
1,2-Diphenylhydrazine ^C	0	--	--	na	5.4E+00	--	--	na	5.4E+00	--	--	--	--	--	--	--	--	--	--	na	5.4E+00
Alpha-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Beta-Endosulfan	0	2.2E-01	5.6E-02	na	2.4E+02	2.2E-01	5.6E-02	na	2.4E+02	--	--	--	--	--	--	--	--	2.2E-01	5.6E-02	na	2.4E+02
Endosulfan Sulfate	0	--	--	na	2.4E+02	--	--	na	2.4E+02	--	--	--	--	--	--	--	--	--	--	na	2.4E+02
Endrin	0	8.6E-02	3.6E-02	na	8.1E-01	8.6E-02	3.6E-02	na	8.1E-01	--	--	--	--	--	--	--	--	8.6E-02	3.6E-02	na	8.1E-01
Endrin Aldehyde	0	--	--	na	8.1E-01	--	--	na	8.1E-01	--	--	--	--	--	--	--	--	--	--	na	8.1E-01

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Ethylbenzene	0	--	--	na	2.9E+04	--	--	na	2.9E+04	--	--	--	--	--	--	--	--	--	--	na	2.9E+04
Fluoranthene	0	--	--	na	3.7E+02	--	--	na	3.7E+02	--	--	--	--	--	--	--	--	--	--	na	3.7E+02
Fluorene	0	--	--	na	1.4E+04	--	--	na	1.4E+04	--	--	--	--	--	--	--	--	--	--	na	1.4E+04
Foaming Agents	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Guthion	0	--	1.0E-02	na	--	--	1.0E-02	na	--	--	--	--	--	--	--	--	--	--	1.0E-02	na	--
Heptachlor ^C	0	5.2E-01	3.8E-03	na	2.1E-03	5.2E-01	3.8E-03	na	2.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	2.1E-03
Heptachlor Epoxide ^C	0	5.2E-01	3.8E-03	na	1.1E-03	5.2E-01	3.8E-03	na	1.1E-03	--	--	--	--	--	--	--	--	5.2E-01	3.8E-03	na	1.1E-03
Hexachlorobenzene ^C	0	--	--	na	7.7E-03	--	--	na	7.7E-03	--	--	--	--	--	--	--	--	--	--	na	7.7E-03
Hexachlorobutadiene ^C	0	--	--	na	5.0E+02	--	--	na	5.0E+02	--	--	--	--	--	--	--	--	--	--	na	5.0E+02
Hexachlorocyclohexane																					
Alpha-BHC ^C	0	--	--	na	1.3E-01	--	--	na	1.3E-01	--	--	--	--	--	--	--	--	--	--	na	1.3E-01
Hexachlorocyclohexane																					
Beta-BHC ^C	0	--	--	na	4.6E-01	--	--	na	4.6E-01	--	--	--	--	--	--	--	--	--	--	na	4.6E-01
Hexachlorocyclohexane																					
Gamma-BHC ^C (Lindane)	0	9.5E-01	na	na	6.3E-01	9.5E-01	--	na	6.3E-01	--	--	--	--	--	--	--	--	9.5E-01	--	na	6.3E-01
Hexachlorocyclopentadiene	0	--	--	na	1.7E+04	--	--	na	1.7E+04	--	--	--	--	--	--	--	--	--	--	na	1.7E+04
Hexachloroethane ^C	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Hydrogen Sulfide	0	--	2.0E+00	na	--	--	2.0E+00	na	--	--	--	--	--	--	--	--	--	--	2.0E+00	na	--
Indeno (1,2,3-cd) pyrene ^C	0	--	--	na	4.9E-01	--	--	na	4.9E-01	--	--	--	--	--	--	--	--	--	--	na	4.9E-01
Iron	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Isophorone ^C	0	--	--	na	2.6E+04	--	--	na	2.6E+04	--	--	--	--	--	--	--	--	--	--	na	2.6E+04
Kepone	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Lead	0	2.9E+02	3.3E+01	na	--	2.9E+02	3.3E+01	na	--	--	--	--	--	--	--	--	--	2.9E+02	3.3E+01	na	--
Malathion	0	--	1.0E-01	na	--	--	1.0E-01	na	--	--	--	--	--	--	--	--	--	--	1.0E-01	na	--
Manganese	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Mercury	0	1.4E+00	7.7E-01	na	5.1E-02	1.4E+00	7.7E-01	na	5.1E-02	--	--	--	--	--	--	--	--	1.4E+00	7.7E-01	na	5.1E-02
Methyl Bromide	0	--	--	na	4.0E+03	--	--	na	4.0E+03	--	--	--	--	--	--	--	--	--	--	na	4.0E+03
Methoxychlor	0	--	3.0E-02	na	--	--	3.0E-02	na	--	--	--	--	--	--	--	--	--	--	3.0E-02	na	--
Mirex	0	--	0.0E+00	na	--	--	0.0E+00	na	--	--	--	--	--	--	--	--	--	--	0.0E+00	na	--
Monochlorobenzene	0	--	--	na	2.1E+04	--	--	na	2.1E+04	--	--	--	--	--	--	--	--	--	--	na	2.1E+04
Nickel	0	3.3E+02	3.7E+01	na	4.6E+03	3.3E+02	3.7E+01	na	4.6E+03	--	--	--	--	--	--	--	--	3.3E+02	3.7E+01	na	4.6E+03
Nitrate (as N)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Nitrobenzene	0	--	--	na	1.9E+03	--	--	na	1.9E+03	--	--	--	--	--	--	--	--	--	--	na	1.9E+03
N-Nitrosodimethylamine ^C	0	--	--	na	8.1E+01	--	--	na	8.1E+01	--	--	--	--	--	--	--	--	--	--	na	8.1E+01
N-Nitrosodiphenylamine ^C	0	--	--	na	1.6E+02	--	--	na	1.6E+02	--	--	--	--	--	--	--	--	--	--	na	1.6E+02
N-Nitrosodi-n-propylamine ^C	0	--	--	na	1.4E+01	--	--	na	1.4E+01	--	--	--	--	--	--	--	--	--	--	na	1.4E+01
Parathion	0	6.5E-02	1.3E-02	na	--	6.5E-02	1.3E-02	na	--	--	--	--	--	--	--	--	--	6.5E-02	1.3E-02	na	--
PCB-1016	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1221	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1232	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1242	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1248	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1254	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB-1260	0	--	1.4E-02	na	--	--	1.4E-02	na	--	--	--	--	--	--	--	--	--	--	1.4E-02	na	--
PCB Total ^C	0	--	--	na	1.7E-03	--	--	na	1.7E-03	--	--	--	--	--	--	--	--	--	--	na	1.7E-03

Parameter (ug/l unless noted)	Background Conc.	Water Quality Criteria				Wasteload Allocations				Antidegradation Baseline				Antidegradation Allocations				Most Limiting Allocations			
		Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH	Acute	Chronic	HH (PWS)	HH
Pentachlorophenol ^C	0	7.7E-03	5.9E-03	na	8.2E+01	7.7E-03	5.9E-03	na	8.2E+01	--	--	--	--	--	--	--	--	7.7E-03	5.9E-03	na	8.2E+01
Phenol	0	--	--	na	4.6E+06	--	--	na	4.6E+06	--	--	--	--	--	--	--	--	--	--	na	4.6E+06
Pyrene	0	--	--	na	1.1E+04	--	--	na	1.1E+04	--	--	--	--	--	--	--	--	--	--	na	1.1E+04
Radionuclides (pCi/l except Beta/Photon)	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Gross Alpha Activity Beta and Photon Activity (mrem/yr)	0	--	--	na	1.5E+01	--	--	na	1.5E+01	--	--	--	--	--	--	--	--	--	--	na	1.5E+01
Strontium-90	0	--	--	na	4.0E+00	--	--	na	4.0E+00	--	--	--	--	--	--	--	--	--	--	na	4.0E+00
Tritium	0	--	--	na	8.0E+00	--	--	na	8.0E+00	--	--	--	--	--	--	--	--	--	--	na	8.0E+00
Selenium	0	--	--	na	2.0E+04	--	--	na	2.0E+04	--	--	--	--	--	--	--	--	--	--	na	2.0E+04
Silver	0	2.0E+01	5.0E+00	na	1.1E+04	2.0E+01	5.0E+00	na	1.1E+04	--	--	--	--	--	--	--	--	2.0E+01	5.0E+00	na	1.1E+04
Sulfate	0	1.2E+01	--	na	--	1.2E+01	--	na	--	--	--	--	--	--	--	--	--	1.2E+01	--	na	--
1,1,2,2-Tetrachloroethane ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tetrachloroethylene ^C	0	--	--	na	1.1E+02	--	--	na	1.1E+02	--	--	--	--	--	--	--	--	--	--	na	1.1E+02
Thallium	0	--	--	na	8.9E+01	--	--	na	8.9E+01	--	--	--	--	--	--	--	--	--	--	na	8.9E+01
Toluene	0	--	--	na	6.3E+00	--	--	na	6.3E+00	--	--	--	--	--	--	--	--	--	--	na	6.3E+00
Total dissolved solids	0	--	--	na	2.0E+05	--	--	na	2.0E+05	--	--	--	--	--	--	--	--	--	--	na	2.0E+05
Toxaphene ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Tributyltin	0	7.3E-01	2.0E-04	na	7.5E-03	7.3E-01	2.0E-04	na	7.5E-03	--	--	--	--	--	--	--	--	7.3E-01	2.0E-04	na	7.5E-03
1,2,4-Trichlorobenzene	0	4.6E-01	6.3E-02	na	--	4.6E-01	6.3E-02	na	--	--	--	--	--	--	--	--	--	4.6E-01	6.3E-02	na	--
1,1,2-Trichloroethane ^C	0	--	--	na	9.4E+02	--	--	na	9.4E+02	--	--	--	--	--	--	--	--	--	--	na	9.4E+02
Trichloroethylene ^C	0	--	--	na	4.2E+02	--	--	na	4.2E+02	--	--	--	--	--	--	--	--	--	--	na	4.2E+02
2,4,6-Trichlorophenol ^C	0	--	--	na	8.1E+02	--	--	na	8.1E+02	--	--	--	--	--	--	--	--	--	--	na	8.1E+02
2-(2,4,5-Trichlorophenoxy) propionic acid (Silvex)	0	--	--	na	6.5E+01	--	--	na	6.5E+01	--	--	--	--	--	--	--	--	--	--	na	6.5E+01
Vinyl Chloride ^C	0	--	--	na	--	--	--	na	--	--	--	--	--	--	--	--	--	--	--	na	--
Zinc	0	--	--	na	6.1E+01	--	--	na	6.1E+01	--	--	--	--	--	--	--	--	--	--	na	6.1E+01
	0	2.1E+02	2.2E+02	na	6.9E+04	2.1E+02	2.2E+02	na	6.9E+04	--	--	--	--	--	--	--	--	2.1E+02	2.2E+02	na	6.9E+04

Notes:

- All concentrations expressed as micrograms/liter (ug/l), unless noted otherwise
- Discharge flow is highest monthly average or Form 2C maximum for Industries and design flow for Municipals
- Metals measured as Dissolved, unless specified otherwise
- "C" indicates a carcinogenic parameter
- Regular WLAs are mass balances (minus background concentration) using the % of stream flow entered above under Mixing Information.
Antidegradation WLAs are based upon a complete mix.
- Antideg. Baseline = (0.25(WQC - background conc.) + background conc.) for acute and chronic
= (0.1(WQC - background conc.) + background conc.) for human health
- WLAs established at the following stream flows: 1Q10 for Acute, 30Q10 for Chronic Ammonia, 7Q10 for Other Chronic, 30Q5 for Non-carcinogens, Harmonic Mean for Carcinogens, and Annual Average for Dioxin. Mixing ratios may be substituted for stream flows where appropriate.

Metal	Target Value (SSTV)
Antimony	4.3E+03
Arsenic	9.0E+01
Barium	na
Cadmium	1.2E+00
Chromium III	8.0E+01
Chromium VI	6.4E+00
Copper	9.9E+00
Iron	na
Lead	2.0E+01
Manganese	na
Mercury	5.1E-02
Nickel	2.2E+01
Selenium	3.0E+00
Silver	4.7E+00
Zinc	8.6E+01

Note: do not use QL's lower than the minimum QL's provided in agency guidance

Lovettsville Town Wastewater Treatment Facility

VA0023183

Effluent pH Data

Date	pH (S.U.)
11-Dec-2003	7.3
12-Jan-2004	7.2
10-Feb-2004	7.4
10-Mar-2004	7.4
12-Apr-2004	7.1
10-May-2004	7.1
09-Jun-2004	0.5
12-Jul-2004	7.3
01-Sep-2004	7.6
10-Sep-2004	7.6
10-Nov-2004	7.6
09-Dec-2004	7.5
10-Jan-2005	7.3
10-Feb-2005	7.6
09-Mar-2005	7.4
12-Apr-2005	7.4
10-May-2005	7.2
09-Jun-2005	7.4
11-Jul-2005	7.7
10-Aug-2005	7.7
14-Sep-2005	7.9
11-Oct-2005	7.9
09-Nov-2005	7.7
08-Dec-2005	7.5
10-Jan-2006	7.3
09-Feb-2006	7.3
09-Mar-2006	7.3
07-Apr-2006	7.9
09-May-2006	8
09-Jun-2006	7.5
10-Jul-2006	7.6
09-Aug-2006	8.2
11-Sep-2006	7.5
10-Oct-2006	7.5
09-Nov-2006	7.6
11-Dec-2006	7.4
10-Jan-2007	7.5
09-Feb-2007	7.5
09-Mar-2007	7.6
09-Apr-2007	7.3
08-May-2007	7.2
11-Jun-2007	7.6
10-Jul-2007	7.4
10-Sep-2007	7.6
10-Oct-2007	7.7
09-Nov-2007	7.8
10-Dec-2007	7.8
08-Jan-2008	7.8
08-Feb-2008	7.6
07-Mar-2008	7.5
10-Apr-2008	7.5
09-May-2008	7.3
10-Jun-2008	7.2

90th percentile	7.8
-----------------	-----

Lovettsville Town Wastewater Treatment Facility

VA0023183

Effluent Temperature Data

Date	Temperature (°C)
11-Dec-2003	17
10-Feb-2004	11.6
10-Mar-2004	8.7
12-Apr-2004	11.5
10-May-2004	14.5
09-Jun-2004	18.3
12-Jul-2004	19
01-Sep-2004	22.9
10-Sep-2004	23.6
12-Oct-2004	22.5
10-Nov-2004	19.1
09-Dec-2004	17.3
10-Jan-2005	14.3
10-Feb-2005	11.9
09-Mar-2005	9.8
12-Apr-2005	10.6
10-May-2005	13.9
09-Jun-2005	16.3
11-Jul-2005	21
10-Aug-2005	22.8
14-Sep-2005	23.6
11-Oct-2005	22.4
09-Nov-2005	21.2
08-Dec-2005	17
10-Jan-2006	13.3
09-Feb-2006	13
09-Mar-2006	11.1
07-Apr-2006	12.6
09-May-2006	14.9
09-Jun-2006	19.4
10-Jul-2006	21.6
09-Aug-2006	23.1
11-Sep-2006	23.8
10-Oct-2006	22.2
11-Dec-2006	16.9
10-Jan-2007	15.1
09-Feb-2007	12.8
09-Mar-2007	10.5
09-Apr-2007	11.6
08-May-2007	14.5
11-Jun-2007	19.1
10-Jul-2007	22.2
09-Aug-2007	23.4
10-Sep-2007	24.9
10-Oct-2007	24.5
09-Nov-2007	23
10-Dec-2007	18.8
08-Jan-2008	11.1
08-Feb-2008	12.7
07-Mar-2008	10.8
10-Apr-2008	11.9
09-May-2008	15.3
10-Jun-2008	17.3
90th Percentile	23.3

Lovettsville Town Wastewater Treatment Facility

VA0023183

Effluent Hardness Data

Date	Hardness as CaCO ₃ (mg/L)
08-Nov-1999	206
07-Feb-2000	186
06-Mar-2000	190
10-Apr-2000	200
08-May-2000	168
12-Jun-2000	230
11-Jul-2000	234
09-Aug-2000	208
11-Sep-2000	212
11-Oct-2000	210
13-Nov-2000	220
11-Dec-2000	206
09-Jan-2001	202
03-Jul-2008	180

Mean	204
------	-----

Facility = Lovettesville STP
Chemical = Ammonia as Nitrogen
Chronic averaging period = 30
WLAa = 9.65
WLAc = 2.18
Q.L. = 0.2
samples/mo. = 12
samples/wk. = 3

Summary of Statistics:

observations = 1
Expected Value = 9
Variance = 29.16
C.V. = 0.6
97th percentile daily values = 21.9007
97th percentile 4 day average = 14.9741
97th percentile 30 day average = 10.8544
< Q.L. = 0
Model used = BPJ Assumptions, type 2 data

A limit is needed based on Chronic Toxicity
Maximum Daily Limit = 4.39852080364756
Average Weekly limit = 3.2172703308024
Average Monthly Limit = 2.39644588432973

The data are:

ATTACHMENT A
DEPARTMENT OF ENVIRONMENTAL QUALITY
WATER QUALITY CRITERIA MONITORING

CASRN#	CHEMICAL	EPA ANALYSIS NO.	QUANTIFICATION LEVEL ⁽¹⁾	REPORTING RESULTS	SAMPLE TYPE ⁽²⁾
METALS					
7440-50-8	Copper, dissolved	(3)	10		Grab
7439-92-1	Lead, dissolved	(3)	20		Grab
7440-02-0	Nickel, dissolved	(3)	22		Grab
7440-66-6	Zinc, dissolved	(3)	86		Grab

Name of Principal Executive Officer or Authorized Agent/Title

Signature of Principal Officer or Authorized Agent/Date

I certify under penalty of law that this document and all attachments were prepared under my direction or supervision in accordance with a system designed to assure that qualified personnel properly gather and evaluate the information submitted. Based on my inquiry of the person or persons who manage the system or those persons directly responsible for gathering the information, the information submitted is to the best of my knowledge and belief, true, accurate, and complete. I am aware that there are significant penalties for submitting false information including the possibility of fine and imprisonment for knowing violations. See 18 U.S.C. Sec. 1001 and 33 U.S.C. Sec. 1319. (Penalties under these statutes may include fines up to \$10,000 and or maximum imprisonment of between 6 months and 5 years.)

FOOTNOTES:

- (1) Quantification level (QL) is defined as the lowest concentration used for the calibration of a measurement system when the calibration is in accordance with the procedures published for the required method.

The quantification levels indicated for the metals are actually Specific Target Values developed for this permit. The Specific Target Value is the approximate value that may initiate a wasteload allocation analysis. Target values are not wasteload allocations or effluent limitations. The Specific Target Values are subject to change based on additional information such as hardness data, receiving stream flow, and design flows.

Units for the quantification level are micrograms/liter unless otherwise specified.

Quality control and quality assurance information shall be submitted to document that the required quantification level has been attained.

- (2) Sample Type

G = Grab = An individual sample collected in less than 15 minutes. Substances specified with "grab" sample type shall only be collected as grabs. The permittee may analyze multiple grabs and report the average results provided that the individual grab results are also reported. For grab metals samples, the individual samples shall be filtered and preserved immediately upon collection.

- (3) A specific analytical method is not specified; however a target value for each metal has been established. An appropriate method to meet the target value shall be selected from the following list of EPA methods (or any approved method presented in 40 CFR Part 136). If the test result is less than the method QL, a "<[QL]" shall be reported where the actual analytical test QL is substituted for [QL].

<u>Metal</u>	<u>Analytical Method</u>
Antimony	1638; 1639
Arsenic	206.5; 1632
Chromium ⁽⁹⁾	1639
Cadmium	1637; 1638; 1639; 1640
Chromium VI	218.6; 1639
Copper	1638; 1640
Lead	1637; 1638; 1640
Mercury	245.7; 1631
Nickel	1638; 1639; 1640
Selenium	1638; 1639
Silver	1638
Zinc	1638; 1639

STREAM INSPECTION REPORT FORM

Discharge Name: LOUETTSVILLE WWTF

Location: _____

General Stream Information:Stream Name: DUTCHMAN CREEK, OTTopographic Map (attach copy): SEE FSBasin: POT Section: 10 Class: III Special Standards: NONEAre the standards for this stream violated due to natural causes? (Y/N) NIs this stream correctly classified? (Y/N) Y

If "N", what is the correct classification? _____

Additional Discharges Information:Is there a discharger within 3 miles upstream of the proposal? (Y/N) NDoes antidegradation apply to this analysis? (Y/N) NAny dams in stream section being modeled? (Y/N) N

Notes:

Inspected by DAVE LAK Date 4/9/98 Region NURO

0.250 MGD FLOW

STREAM INSPECTION REPORT FORM

(Fill In This Page for Each Segment to be Modeled)

Specific Stream Information From Field Inspection: Segment Number 1Reason for Defining Segment: Tributary at End ☒ Physical Change at End ☐
Discharge at End ☐ End of Model ☐Length of Segment (mi.) .95Estimated Average Width of Section (ft.) 3.5Estimated Average Depth of Section (ft.) in Stream Center .25Estimated Average Velocity of Section (ft/sec) .45Estimated Flow in the Segment (MGD) 7.010 = 0General Type of Cross Section: Rectangular ☒ Triangular ☐ Deep Narrow U ☐ Wide Shallow Arc ☐
Section in Segment: Irregular ☐ No Defined Channel ☐

General Channel Characteristics of Segment:

Mostly Straight ☐ Moderately Meandering ☒ Severely Meandering ☐ No Defined Channel ☐Does the stream have a pool and riffle character? (Y/N) NIf "Y" % of length that is pools ☐ Average depth of pools (ft) ☐% of length that is riffles ☐ Average depth of riffles (ft) ☐Bottom: Sand ☐ Silt ☒ Gravel ☐ Small Rock ☐ Large Rock ☐ Boulders ☐Sludge Deposits: None ☐ Trace ☐ Light ☒ Heavy ☐Plants: Rooted: None ☒ Trace ☐ Light ☐ Heavy ☐Algae: None ☐ Film on Edges Only ☒ Film on Entire Bottom ☐Does the water have an evident green color? (Y/N) N

Tributary: (Fill in if a tributary enters at the end of the segment)

Tributary Name: DUTCHMAN CREEKWidth (ft) 5.5 Depth (ft) .4 Estimated Flow (MGD) .0323Any evident Water Quality problems in the Trib.? (Y/N) NIf "Y", explain: ☐

Discharges: (Fill in if a discharge enters at the end of the segment)

Discharge Name: N/AAny evident problem caused by this discharge? (Y/N) ☐If "Y", explain: ☐

STREAM INSPECTION REPORT FORM

(Fill In This Page for Each Segment to be Modeled)

Specific Stream Information From Field Inspection: Segment Number 2Reason for Defining Segment: Tributary at End ☐ Physical Change at End ☐
Discharge at End ☐ End of Model ☒Length of Segment (mi.) 2.28Estimated Average Width of Section (ft.) 5.5Estimated Average Depth of Section (ft.) in Stream Center .4Estimated Average Velocity of Section (ft/sec) .2Estimated Flow in the Segment (MGD) .0323General Type of Cross Section: Rectangular ☒ Triangular ☐ Deep Narrow U ☐ Wide Shallow Arc ☐
Section in Segment: Irregular ☐ No Defined Channel ☐

General Channel Characteristics of Segment:

Mostly Straight ☐ Moderately Meandering ☒ Severely Meandering ☐ No Defined Channel ☐Does the stream have a pool and riffle character? (Y/N) NIf "Y" % of length that is pools ☐ Average depth of pools (ft) ☐% of length that is riffles ☐ Average depth of riffles (ft) ☐Bottom: Sand ☐ Silt ☐ Gravel ☐ Small Rock ☒ Large Rock ☐ Boulders ☐Sludge Deposits: None ☒ Trace ☐ Light ☐ Heavy ☐Plants: Rooted: None ☒ Trace ☐ Light ☐ Heavy ☐Algae: None ☒ Film on Edges Only ☐ Film on Entire Bottom ☐Does the water have an evident green color? (Y/N) N

Tributary: (Fill in if a tributary enters at the end of the segment)

Tributary Name: POTOMAC RIVERWidth (ft) ☐ Depth (ft) ☐ Estimated Flow (MGD) ☐Any evident Water Quality problems in the Trib.? (Y/N) ☐If "Y", explain: ☐

Discharges: (Fill in if a discharge enters at the end of the segment)

Discharge Name: ☐Any evident problems caused by this discharge? (Y/N) ☐If "Y", explain: ☐

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: A TRIBUTARY ENTERS AT END

SEGMENT LENGTH = .95 MI

SEGMENT WIDTH = 3.5 FT
SEGMENT DEPTH = .25 FT
SEGMENT VELOCITY = .45 FT/SEC

DRAINAGE AREA AT SEGMENT START = 1.15 SQ.MI.
DRAINAGE AREA AT SEGMENT END = 1.69 SQ.MI.

ELEVATION AT UPSTREAM END = 420 FT
ELEVATION AT DOWNSTREAM END = 370 FT

THE CROSS SECTION IS: RECTANGULAR
THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SILT
SLUDGE DEPOSITS = LIGHT
AQUATIC PLANTS = NONE
ALGAE OBSERVED = VISIBLE ONLY ON EDGES
WATER COLORED GREEN (Y/N) = N

NOTE: RAN MODEL W/O SLUDGE DEPOSITS
+ ALGAE + LIMITATION RESULTS WERE
THE SAME

TRIBUTARY DATA

FLOW = .0323 MGD
BOD5 = 2 MG/L
TKN = 0 MG/L
D.O. = 7.398 MG/L

Q CONTINUITY CHECK - WIDTH x DEPTH x VELOCITY x .6463

$$3.5 \times .25 \times .45 \times .6463 = 0.2544806 \text{ MG}$$

SEGMENT INFORMATION

SEGMENT # 2

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 2.28 MI

SEGMENT WIDTH = 5.5 FT

SEGMENT DEPTH = .4 FT

SEGMENT VELOCITY = .2 FT/SEC

DRAINAGE AREA AT SEGMENT START = 8.67 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 12.1 SQ.MI.

ELEVATION AT UPSTREAM END = 370 FT

ELEVATION AT DOWNSTREAM END = 240 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SMALL ROCK

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = NONE

ALGAE OBSERVED = NONE

WATER COLORED GREEN (Y/N) = N

REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
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$$Q \text{ CONT. CHECK} = 5.5 \times .4 \times .2 \times .6463 = 0.284372 \text{ MGD}$$

REGIONAL MODELING SYSTEM VERSION 3.2

MODEL SIMULATION FOR THE LOVETTSVILLE WWTF DISCHARGE
TO DUTCHMAN CREEK,UT

THE SIMULATION STARTS AT THE LOVETTSVILLE WWTF DISCHARGE

***** PROPOSED PERMIT LIMITS *****

FLOW = .25 MGD cBOD5 = 15 Mg/L TKN = 6 Mg/L D.O. = 6 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

***** BACKGROUND CONDITIONS *****

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0.00000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.398 Mg/L
THE BACKGROUND cBOD_u OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

***** MODEL PARAMETERS *****

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
----	-----	-----	-----	-----	-----	-----	-----	-----	-----
1	0.95	0.524	20.000	1.400	0.450	1.219	395.00	25.00	8.220
2	2.28	0.395	20.000	1.400	0.550	0.000	305.00	25.00	8.246

(The K Rates shown are at 20°C ... the model corrects them for temperature.)

TOTAL STREAMFLOW = 0.2500 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
-----	-----	-----	-----	-----
0.000	0.000	6.000	37.500	12.990
0.100	0.100	5.736	36.738	12.890
0.200	0.200	5.548	35.991	12.791
0.300	0.300	5.417	35.260	12.693
0.400	0.400	5.330	34.543	12.596
0.500	0.500	5.277	33.841	12.499
0.600	0.600	5.249	LOW 33.154	12.403
0.700	0.700	5.240 → D.O.	32.480	12.308
0.800	0.800	5.246	31.820	12.213
0.900	0.900	5.264	31.173	12.119
0.950	0.950	5.275	30.855	12.073

FOR THE TRIBUTARY AT THE END OF SEGMENT 1

FLOW = .0323 MGD cBOD5 = 2 Mg/L TKN = 0 Mg/L D.O. = 7.398 Mg/L

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.0023 MGD

TOTAL STREAMFLOW = 0.2846 MGD
(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
-----	-----	-----	-----	-----
0.000	0.950	5.533	27.712	10.605
0.100	1.050	5.592	26.966	10.473
0.200	1.150	5.651	26.240	10.343
0.300	1.250	5.711	25.534	10.214
0.400	1.350	5.771	24.847	10.087
0.500	1.450	5.830	24.178	9.962
0.600	1.550	5.888	23.528	9.838
0.700	1.650	5.945	22.894	9.715
0.800	1.750	6.001	22.278	9.595
0.900	1.850	6.055	21.678	9.475
1.000	1.950	6.109	21.095	9.357
1.100	2.050	6.161	20.527	9.241
1.200	2.150	6.212	19.975	9.126
1.300	2.250	6.262	19.437	9.012
1.400	2.350	6.310	18.914	8.900
1.500	2.450	6.357	18.405	8.790
1.600	2.550	6.403	17.910	8.680
1.700	2.650	6.448	17.428	8.572
1.800	2.750	6.492	16.959	8.466
1.900	2.850	6.535	16.502	8.361
2.000	2.950	6.576	16.058	8.257
2.100	3.050	6.617	15.626	8.154
2.200	3.150	6.656	15.205	8.052
2.280	3.230	6.687	14.877	7.972

REGIONAL MODELING SYSTEM
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Ver 3.2 (OWRM - 9/90)

DATA FILE = LOV1.MOD

REGIONAL MODELING SYSTEM

VERSION 3.2

DATA FILE SUMMARY

THE NAME OF THE DATA FILE IS: LOV1.MOD

THE STREAM NAME IS: DUTCHMAN CREEK, UT
THE RIVER BASIN IS: POTOMAC
THE SECTION NUMBER IS: 10
THE CLASSIFICATION IS: III

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: LOVETTSVILLE WWTF

PROPOSED LIMITS ARE:

FLOW = .25 MGD
BOD5 = 16 MG/L —
TKN = 6 MG/L
D.O. = 6 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 2

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON

THE GAUGE NAME IS: PINEY CREEK
GAUGE DRAINAGE AREA = 13.7 SQ.MI.
GAUGE 7Q10 = .058167 MGD
DRAINAGE AREA AT DISCHARGE = 1.15 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = Y
ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 25 °C

SEGMENT INFORMATION

SEGMENT # 1

SEGMENT ENDS BECAUSE: A TRIBUTARY ENTERS AT END

SEGMENT LENGTH = .95 MI

SEGMENT WIDTH = 3.5 FT

SEGMENT DEPTH = .25 FT

SEGMENT VELOCITY = .45 FT/SEC

DRAINAGE AREA AT SEGMENT START = 1.15 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 1.69 SQ.MI.

ELEVATION AT UPSTREAM END = 420 FT

ELEVATION AT DOWNSTREAM END = 370 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SILT

SLUDGE DEPOSITS = LIGHT

AQUATIC PLANTS = NONE

ALGAE OBSERVED = VISIBLE ONLY ON EDGES

WATER COLORED GREEN (Y/N) = N

TRIBUTARY DATA

FLOW = .0323 MGD

BOD5 = 2 MG/L

TKN = 0 MG/L

D.O. = 7.398 MG/L

SEGMENT INFORMATION

SEGMENT # 2

SEGMENT ENDS BECAUSE: THE MODEL ENDS

SEGMENT LENGTH = 2.28 MI

SEGMENT WIDTH = 5.5 FT

SEGMENT DEPTH = .4 FT

SEGMENT VELOCITY = .2 FT/SEC

DRAINAGE AREA AT SEGMENT START = 8.67 SQ.MI.

DRAINAGE AREA AT SEGMENT END = 12.1 SQ.MI.

ELEVATION AT UPSTREAM END = 370 FT

ELEVATION AT DOWNSTREAM END = 240 FT

THE CROSS SECTION IS: RECTANGULAR

THE CHANNEL IS: MODERATELY MEANDERING

POOLS AND RIFFLES (Y/N) = N

THE BOTTOM TYPE = SMALL ROCK

SLUDGE DEPOSITS = NONE

AQUATIC PLANTS = NONE

ALGAE OBSERVED = NONE

WATER COLORED GREEN (Y/N) = N

REGIONAL MODELING SYSTEM
07-22-1998 15:32:27

Ver 3.2 (OWRM - 9/90)

REGIONAL MODELING SYSTEM VERSION 3.2

MODEL SIMULATION FOR THE LOVETTSVILLE WWTF DISCHARGE
TO DUTCHMAN CREEK,UT

THE SIMULATION STARTS AT THE LOVETTSVILLE WWTF DISCHARGE

***** PROPOSED PERMIT LIMITS *****

FLOW = .25 MGD cBOD5 = 16 Mg/L TKN = 6 Mg/L D.O. = 6 Mg/L

**** THE MAXIMUM CHLORINE ALLOWABLE IN THE DISCHARGE IS 0.011 Mg/L ****

THE SECTION BEING MODELED IS BROKEN INTO 2 SEGMENTS
RESULTS WILL BE GIVEN AT 0.1 MILE INTERVALS

***** BACKGROUND CONDITIONS *****

THE 7Q10 STREAM FLOW AT THE DISCHARGE IS 0.00000 MGD
THE DISSOLVED OXYGEN OF THE STREAM IS 7.398 Mg/L
THE BACKGROUND cBODu OF THE STREAM IS 5 Mg/L
THE BACKGROUND nBOD OF THE STREAM IS 0 Mg/L

***** MODEL PARAMETERS *****

SEG.	LEN. Mi	VEL. F/S	K2 1/D	K1 1/D	KN 1/D	BENTHIC Mg/L	ELEV. Ft	TEMP. °C	DO-SAT Mg/L
1	0.95	0.524	20.000	1.600	0.450	1.219	395.00	25.00	8.220
2	2.28	0.395	20.000	1.600	0.550	0.000	305.00	25.00	8.246

(The K Rates shown are at 20°C ... the model corrects them for temperature.)

TOTAL STREAMFLOW = 0.2500 MGD
(Including Discharge)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.000	6.000	40.000	12.990
0.100	0.100	5.591	39.072	12.890
0.200	0.200	5.296	38.166	12.791
0.300	0.300	5.088	37.281	12.693
0.400	0.400	4.947	36.416	12.596
0.500	0.500	4.857	35.572	12.499
0.600	0.600	4.805	34.747	12.403
0.700	0.700	4.783	33.941	12.308
0.800	0.800	4.783	33.154	12.213
0.900	0.900	4.800	32.385	12.119
0.950	0.950	4.813	32.007	12.073

THE STANDARDS ARE VIOLATED IN THIS SEGMENT
--

BELOW
5.0 MG/L D.

FOR THE TRIBUTARY AT THE END OF SEGMENT 1

FLOW = .0323 MGD cBOD5 = 2 Mg/L TKN = 0 Mg/L D.O. = 7.398 Mg/L

FLOW FROM INCREMENTAL DRAINAGE AREA = 0.0023 MGD

TOTAL STREAMFLOW = 0.2846 MGD
(Including Discharge, Tributaries and Incremental D.A. Flow)

DISTANCE FROM HEAD OF SEGMENT (MI.)	TOTAL DISTANCE FROM MODEL BEGINNING (MI.)	DISSOLVED OXYGEN (Mg/L)	cBODu (Mg/L)	nBODu (Mg/L)
0.000	0.950	5.127	28.724	10.605
0.100	1.050	5.190	27.843	10.473
0.200	1.150	5.259	26.988	10.343
0.300	1.250	5.331	26.159	10.214
0.400	1.350	5.405	25.356	10.087
0.500	1.450	5.479	24.578	9.962
0.600	1.550	5.553	23.823	9.838
0.700	1.650	5.626	23.092	9.715
0.800	1.750	5.698	22.383	9.595
0.900	1.850	5.768	21.696	9.475
1.000	1.950	5.836	21.030	9.357
1.100	2.050	5.903	20.384	9.241
1.200	2.150	5.968	19.759	9.126
1.300	2.250	6.031	19.152	9.012
1.400	2.350	6.093	18.564	8.900
1.500	2.450	6.153	17.994	8.790
1.600	2.550	6.211	17.442	8.680
1.700	2.650	6.268	16.906	8.572
1.800	2.750	6.322	16.387	8.466
1.900	2.850	6.376	15.884	8.361
2.000	2.950	6.427	15.397	8.257
2.100	3.050	6.478	14.924	8.154
2.200	3.150	6.526	14.466	8.052
2.280	3.230	6.564	14.109	7.972

REGIONAL MODELING SYSTEM Ver 3.2 (OWRM - 9/90)
07-22-1998 15:36:27

DATA FILE = LOV1.MOD

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REGIONAL MODELING SYSTEM

VERSION 3.2

DATA FILE SUMMARY

THE NAME OF THE DATA FILE IS: LOV1.MOD

THE STREAM NAME IS: DUTCHMAN CREEK, UT
THE RIVER BASIN IS: POTOMAC
THE SECTION NUMBER IS: 10
THE CLASSIFICATION IS: III

STANDARDS VIOLATED (Y/N) = N
STANDARDS APPROPRIATE (Y/N) = Y

DISCHARGE WITHIN 3 MILES (Y/N) = N

THE DISCHARGE BEING MODELED IS: LOVETTSVILLE WWTF

PROPOSED LIMITS ARE:

FLOW = .25 MGD
BOD5 = 15 MG/L
TKN = 6 MG/L
D.O. = 6 MG/L

THE NUMBER OF SEGMENTS TO BE MODELED = 2

7Q10 WILL BE CALCULATED BY: DRAINAGE AREA COMPARISON

THE GAUGE NAME IS: PINEY CREEK
GAUGE DRAINAGE AREA = 13.7 SQ.MI.
GAUGE 7Q10 = .058167 MGD
DRAINAGE AREA AT DISCHARGE = 1.15 SQ.MI.

STREAM A DRY DITCH AT DISCHARGE (Y/N) = Y
ANTIDEGRADATION APPLIES (Y/N) = N

ALLOCATION DESIGN TEMPERATURE = 25 °C

Public Notice – Environmental Permit

PURPOSE OF NOTICE: To seek public comment on a draft permit from the Department of Environmental Quality that will allow the release of treated wastewater into a water body in Loudoun County, Virginia.

PUBLIC COMMENT PERIOD: *TBD*, 2008 to 5:00 p.m. on *TBD*, 2008

PERMIT NAME: Virginia Pollutant Discharge Elimination System Permit – Wastewater issued by DEQ, under the authority of the State Water Control Board

APPLICANT NAME, ADDRESS AND PERMIT NUMBER: Town of Lovettsville
P.O. Box 209, Lovettsville, VA 20180
VA0023183

NAME AND ADDRESS OF FACILITY: Town of Lovettsville Wastewater Treatment Plant
39183 Irish Corner Road, Lovettsville, VA 20180

PROJECT DESCRIPTION: The Town of Lovettsville has applied for a reissuance of a permit for the public Town of Lovettsville WWTP. The applicant proposes to release treated sewage wastewaters from residential areas at a rate of 0.250 million gallons per day into a water body. The reissuance allows an additional flow tier of 0.375 million gallons per day. Sludge from the treatment process will be sent to a larger facility for further treatment and disposal. The facility proposes to release the treated sewage in the Dutchman Creek, UT, in Loudoun County in the Potomac River watershed. A watershed is the land area drained by a river and its incoming streams. The permit will limit the following pollutants to amounts that protect water quality: pH, cBOD, TSS, DO, Ammonia, Total Nitrogen, Total Phosphorus, Oil & Grease and *E. coli*.

This facility is subject to the requirements of 9 VAC 25-820 and has registered for coverage under the General VPDES Watershed Permit Regulation for Total Nitrogen and Total Phosphorus Discharges and Nutrient Trading in the Chesapeake Watershed in Virginia.

HOW TO COMMENT AND/OR REQUEST A PUBLIC HEARING: DEQ accepts comments and requests for public hearing by e-mail, fax or postal mail. All comments and requests must be in writing and be received by DEQ during the comment period. Submittals must include the names, mailing addresses and telephone numbers of the commenter/requester and of all persons represented by the commenter/requester. A request for public hearing must also include: 1) The reason why a public hearing is requested. 2) A brief, informal statement regarding the nature and extent of the interest of the requester or of those represented by the requestor, including how and to what extent such interest would be directly and adversely affected by the permit. 3) Specific references, where possible, to terms and conditions of the permit with suggested revisions. DEQ may hold a public hearing, including another comment period, if public response is significant and there are substantial, disputed issues relevant to the permit.

CONTACT FOR PUBLIC COMMENTS, DOCUMENT REQUESTS AND ADDITIONAL INFORMATION: The public may review the documents at the DEQ-Northern Regional Office by appointment.

Name: Douglas Frasier

Address: DEQ-Northern Regional Office, 13901 Crown Court, Woodbridge, VA 22193

Phone: (703) 583-3873 E-mail: ddfrasier@deq.virginia.gov Fax: (703) 583-3841

Revised 2/2003

**State "Transmittal Checklist" to Assist in Targeting
Municipal and Industrial Individual NPDES Draft Permits for Review**

Part I. State Draft Permit Submission Checklist

In accordance with the MOA established between the Commonwealth of Virginia and the United States Environmental Protection Agency, Region III, the Commonwealth submits the following draft National Pollutant Discharge Elimination System (NPDES) permit for Agency review and concurrence.

Facility Name:	Town of Lovettsville Wastewater Treatment Plant
NPDES Permit Number:	VA0023183
Permit Writer Name:	Douglas Frasier
Date:	30 July 2008

Major [☐] **Minor** [☒] **Industrial** [☒] **Municipal** [☐]

I.A. Draft Permit Package Submittal Includes:

	Yes	No	N/A
1. Permit Application?	X		
2. Complete Draft Permit (for renewal or first time permit – entire permit, including boilerplate information)?	X		
3. Copy of Public Notice?	X		
4. Complete Fact Sheet?	X		
5. A Priority Pollutant Screening to determine parameters of concern?	X		
6. A Reasonable Potential analysis showing calculated WQBELs?	X		
7. Dissolved Oxygen calculations?	X		
8. Whole Effluent Toxicity Test summary and analysis?			X
9. Permit Rating Sheet for new or modified industrial facilities?			X

I.B. Permit/Facility Characteristics

	Yes	No	N/A
1. Is this a new, or currently unpermitted facility?		X	
2. Are all permissible outfalls (including combined sewer overflow points, non-process water and storm water) from the facility properly identified and authorized in the permit?	X		
3. Does the fact sheet or permit contain a description of the wastewater treatment process?	X		
4. Does the review of PCS/DMR data for at least the last 3 years indicate significant non-compliance with the existing permit?		X	
5. Has there been any change in streamflow characteristics since the last permit was developed?		X	
6. Does the permit allow the discharge of new or increased loadings of any pollutants?	X		
7. Does the fact sheet or permit provide a description of the receiving water body(s) to which the facility discharges, including information on low/critical flow conditions and designated/existing uses?	X		
8. Does the facility discharge to a 303(d) listed water?		X	
a. Has a TMDL been developed and approved by EPA for the impaired water?			X
b. Does the record indicate that the TMDL development is on the State priority list and will most likely be developed within the life of the permit?			X
c. Does the facility discharge a pollutant of concern identified in the TMDL or 303(d) listed water?			X
9. Have any limits been removed, or are any limits less stringent, than those in the current permit?		X	
10. Does the permit authorize discharges of storm water?		X	

I.B. Permit/Facility Characteristics – cont.	Yes	No	N/A
11. Has the facility substantially enlarged or altered its operation or substantially increased its flow or production?		X	
12. Are there any production-based, technology-based effluent limits in the permit?	X		
13. Do any water quality-based effluent limit calculations differ from the State's standard policies or procedures?		X	
14. Are any WQBELs based on an interpretation of narrative criteria?		X	
15. Does the permit incorporate any variances or other exceptions to the State's standards or regulations?		X	
16. Does the permit contain a compliance schedule for any limit or condition?		X	
17. Is there a potential impact to endangered/threatened species or their habitat by the facility's discharge(s)?		X	
18. Have impacts from the discharge(s) at downstream potable water supplies been evaluated?	X		
19. Is there any indication that there is significant public interest in the permit action proposed for this facility?		X	
20. Have previous permit, application, and fact sheet been examined?	X		

Part II. NPDES Draft Permit Checklist

Region III NPDES Permit Quality Checklist – for POTWs (To be completed and included in the record only for POTWs)

II.A. Permit Cover Page/Administration	Yes	No	N/A
1. Does the fact sheet or permit describe the physical location of the facility, including latitude and longitude (not necessarily on permit cover page)?	X		
2. Does the permit contain specific authorization-to-discharge information (from where to where, by whom)?	X		

II.B. Effluent Limits – General Elements	Yes	No	N/A
1. Does the fact sheet describe the basis of final limits in the permit (e.g., that a comparison of technology and water quality-based limits was performed, and the most stringent limit selected)?	X		
2. Does the fact sheet discuss whether “antibacksliding” provisions were met for any limits that are less stringent than those in the previous NPDES permit?			X

II.C. Technology-Based Effluent Limits (POTWs)	Yes	No	N/A
1. Does the permit contain numeric limits for <u>ALL</u> of the following: BOD (or alternative, e.g., CBOD, COD, TOC), TSS, and pH?	X		
2. Does the permit require at least 85% removal for BOD (or BOD alternative) and TSS (or 65% for equivalent to secondary) consistent with 40 CFR Part 133?	X		
a. If no, does the record indicate that application of WQBELs, or some other means, results in more stringent requirements than 85% removal or that an exception consistent with 40 CFR 133.103 has been approved?			X
3. Are technology-based permit limits expressed in the appropriate units of measure (e.g., concentration, mass, SU)?	X		
4. Are permit limits for BOD and TSS expressed in terms of both long term (e.g., average monthly) and short term (e.g., average weekly) limits?	X		
5. Are any concentration limitations in the permit less stringent than the secondary treatment requirements (30 mg/l BOD5 and TSS for a 30-day average and 45 mg/l BOD5 and TSS for a 7-day average)?		X	
a. If yes, does the record provide a justification (e.g., waste stabilization pond, trickling filter, etc.) for the alternate limitations?			X

II.D. Water Quality-Based Effluent Limits	Yes	No	N/A
1. Does the permit include appropriate limitations consistent with 40 CFR 122.44(d) covering State narrative and numeric criteria for water quality?	X		
2. Does the fact sheet indicate that any WQBELs were derived from a completed and EPA approved TMDL?			X
3. Does the fact sheet provide effluent characteristics for each outfall?	X		
4. Does the fact sheet document that a “reasonable potential” evaluation was performed?	X		
a. If yes, does the fact sheet indicate that the “reasonable potential” evaluation was performed in accordance with the State’s approved procedures?	X		
b. Does the fact sheet describe the basis for allowing or disallowing in-stream dilution or a mixing zone?			X
c. Does the fact sheet present WLA calculation procedures for all pollutants that were found to have “reasonable potential”?	X		
d. Does the fact sheet indicate that the “reasonable potential” and WLA calculations accounted for contributions from upstream sources (i.e., do calculations include ambient/background concentrations)?			X
e. Does the permit contain numeric effluent limits for all pollutants for which “reasonable potential” was determined?	X		

II.D. Water Quality-Based Effluent Limits – cont.	Yes	No	N/A
5. Are all final WQBELs in the permit consistent with the justification and/or documentation provided in the fact sheet?	X		
6. For all final WQBELs, are BOTH long-term AND short-term effluent limits established?	X		
7. Are WQBELs expressed in the permit using appropriate units of measure (e.g., mass, concentration)?	X		
8. Does the record indicate that an “antidegradation” review was performed in accordance with the State’s approved antidegradation policy?	X		

II.E. Monitoring and Reporting Requirements	Yes	No	N/A
1. Does the permit require at least annual monitoring for all limited parameters and other monitoring as required by State and Federal regulations?	X		
a. If no, does the fact sheet indicate that the facility applied for and was granted a monitoring waiver, AND, does the permit specifically incorporate this waiver?			
2. Does the permit identify the physical location where monitoring is to be performed for each outfall?		X	
3. Does the permit require at least annual influent monitoring for BOD (or BOD alternative) and TSS to assess compliance with applicable percent removal requirements?		X	
4. Does the permit require testing for Whole Effluent Toxicity?		X	

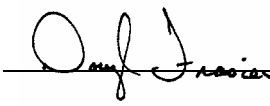
II.F. Special Conditions	Yes	No	N/A
1. Does the permit include appropriate biosolids use/disposal requirements?	X		
2. Does the permit include appropriate storm water program requirements?			X

II.F. Special Conditions – cont.	Yes	No	N/A
3. If the permit contains compliance schedule(s), are they consistent with statutory and regulatory deadlines and requirements?			X
4. Are other special conditions (e.g., ambient sampling, mixing studies, TIE/TRE, BMPs, special studies) consistent with CWA and NPDES regulations?	X		
5. Does the permit allow/authorize discharge of sanitary sewage from points other than the POTW outfall(s) or CSO outfalls [i.e., Sanitary Sewer Overflows (SSOs) or treatment plant bypasses]?		X	
6. Does the permit authorize discharges from Combined Sewer Overflows (CSOs)?		X	
a. Does the permit require implementation of the “Nine Minimum Controls”?			X
b. Does the permit require development and implementation of a “Long Term Control Plan”?			X
c. Does the permit require monitoring and reporting for CSO events?			X
7. Does the permit include appropriate Pretreatment Program requirements?		X	

II.G. Standard Conditions		Yes	No	N/A
1. Does the permit contain all 40 CFR 122.41 standard conditions or the State equivalent (or more stringent) conditions?		X		
List of Standard Conditions – 40 CFR 122.41				
Duty to comply	Property rights	Reporting Requirements		
Duty to reapply	Duty to provide information	Planned change		
Need to halt or reduce activity	Inspections and entry	Anticipated noncompliance		
not a defense	Monitoring and records	Transfers		
Duty to mitigate	Signatory requirement	Monitoring reports		
Proper O & M	Bypass	Compliance schedules		
Permit actions	Upset	24-Hour reporting		
		Other non-compliance		
2. Does the permit contain the additional standard condition (or the State equivalent or more stringent conditions) for POTWs regarding notification of new introduction of pollutants and new industrial users [40 CFR 122.42(b)]?		X		

Part III. Signature Page

Based on a review of the data and other information submitted by the permit applicant, and the draft permit and other administrative records generated by the Department/Division and/or made available to the Department/Division, the information provided on this checklist is accurate and complete, to the best of my knowledge.

Name	<u>Douglas Frasier</u>
Title	<u>Environmental Specialist II</u>
Signature	<u></u>
Date	<u>30 July 2008</u>